JOINT STRATEGY REPORT

SCAPE (Shaping Climate change Adaptive PlacEs)

City of Ostend, Farys, Province of West-Flanders, Flemisch Environment Agency, Kent County Council, Brighton & Hove City Council, Municipality Middelburg, Waterboard Scheldestromen

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INTRODUCTION

The SCAPE project looks into the challenges of climate change in the 2 Seas are and the problems concerning the water management in particular. SCAPE wants to address these challenges of heavy rainfall, sea level rising, salinization, urban heat island effect, extreme drought, etc. by search to develop an alternative strategy for the water management based on a landscape led design approach so an adaptive water system could be developed.

The central question which is the baseline for this strategy can be formulated as follows:

Can landscape led design being used to design an adaptive water management system
which mediates the problems of climate change?

We will develop this strategy by analysing the water management system, the impact of climate change on water management, by looking into landscape as an adaptive system, into the management and planning of the landscape by the partner countries and by analysing different projects. A strategy is distilled from these different topics but especially from the interconnectivity between these topics.

The strategy shall be refined by using it as a framework for the design of the different pilots of SCAPE in urban, Oosteroever Ostend and Brighton, in rural, Kent and Zwin, and in the fringe zone, Gardens of Stene Ostend and Middelburg. This iterative process will adapt the strategy so it can become a guideline for future projects in similar cities with the intention of dealing with the water problems caused by climate change.

In order to zoom in on the specific cases and the different partner countries some basic parameters are noted to give an overview of the contexts we're dealing with (table 1). First we zoom in on some spatial and economic parameters, a second topic considers some parameters considering the governmental structure to finally zoom in on the governing of the landscape.

	Belgium/Flanders	Netherlands	UK	France
Global parameters				
Population[1] (thousand)	11249.42	16939.92	65128.86	66538.39
GDP per capita[2] (US$)	$40454.2	$44290.9	$43929.7	$36352.5
Surface area[3] (sq.km)	30530	41540	243610	549087
Density[4] (people /sq.km)	372	503	269	122

1:Worldbank (2015c), 2: (2015a), 3:(2016), 4:(2015b)

	Belgium/Flanders	Netherlands	UK	France
Governemental parameters				
Dominant governmental system(s)	Federal asymmetric	Decentralised Unitary	Regionalised Unitary, Federal	Regionalised Unitary
Dominant spatial planning tradition(s)	Comprehensive Integrated approach, Land use planning[1]	Comprehensive Integrated approach	Comprehensive Integrated approach, Regional Economic approach, Land Use planning	Comprehensive Integrated approach, Regional Economic approach
Level of development of Comprehensive Integrated approach	Mainly vertical coordination	Strong vertical and horizontal coordination	Mainly horizontal coordination	Strong vertical and horizontal coordination
Shift from governement to governance	Medium	Advanced	Advanced	Advanced

(European commission, 1997; Farinós Dasi, 2007, pp. 32, 40, 42, 43)

	Belgium/Flanders	Netherlands	UK	France
Landscape parameters				
Specific law	No	Yes	No	Yes
Specific policy	No	Yes	Yes	Yes
Landscape department	No	No	Yes	No
Departments involved	Beleidsdomein Ruimtelijke Ordening, Woonbeleid en Onroerend Erfgoed (RWO), Beleidsdomein leefmilieu, Natuur en Energie (LNE)	Ministerie van infrastructuur en milieu, Ministerie van Economische zaken, ministeries van Landbouw, Natuur en Voedselkwaliteit (LNV) en Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (VROM)	Department for Environment, Food and Rural Affairs (DEFRA)	Minstère de l'ecologie, de dévelopment durable et de l' energie, Ministère de l'environnement

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[1] A glossary of the terms can be found on the next page.

I. CLIMATE CHANGE AND WATER MANAGEMENT

I.I. CLIMATE CHANGE

The rise of the sea level has a profound effect on the 2 Seas area because a minimal change can have a serious effect when storm weather is combined with an astronomical tide. For example in Belgium the rise of the sea level is modelled with a speed of 0.85m per 100 years (Lebbe & Claus, 2012). An effect of the change of the sea level is a change in the balance between fresh and salt water. For a small edge along the coast of proximally 200 a 300 meter salinisation of ground water will take place (Lebbe & Claus, 2012, p. 3.37).

On the other hand heavy rainfall can cause floods. Especially when we know that climate change will cause heavy rainfall to become heavier. Two processes are part of this risk. A first risk is caused by the way cities are shaped. The big concrete spaces don't let any space for the infiltration of water. This results in an area where the surface can't store any water anymore and the sewage system needs to drain all the water. This limited system is dimensioned for normal rainfall, extreme rainfall can be too much. A second way heavy rainfall can have an influence on floods in the 2 Seas area is by the water flow coming from the hinterland. As rainfall is becoming heavier the gathering of water at the end of the stream is intensified and can be of such quantity that floods immerse. These effects of climate change are the main topic of the SCAPE Project.

But the side effect of climate change such as drought and the urban heat island effect, as they are strongly related to water management, should also be integrated. The prolonged drought periods which occur can be a problem. The longer the intervals between rainfall the harder it'll get to sustain enough drinking water in high density urban areas.

The increase of intensity and frequency of heat waves is caused by climate change. The intensity of this heat waves is even more strengthened by the environment. The urban context for example has a significant effect on the rise of the temperature. This effect is called the Urban Heat Island effect (UHI). This difference of a few degrees especially at night when the temperature stays above 20°c increases mortality rates significantly (Daanen, Jonkhoff, Bosch, & ten Broeke, 2013; Timmermans, 2017). As the graph below shows it's the combination between urbanisation and climate change which can make the temperature breach a critical threshold. In order to reduce the impact of the urban heat island effect and climate change some water management strategies can be used.

I.II. WATERMANAGEMENT

The Flemish government developed six spatial strategies for climate adaptive cities: Demineralisation, afforestation, ventilation, reduction of heat capitation, space for water and limited impact of sun and hard wind. These strategies are in detail explained and supported with examples on www.klimaatenruimte.be.

In the Netherlands different knowledge institutes worked on a report *"Designing green and blue infrastructure to support healthy urban living"* (Gehrels et al., 2016). On city level as on street level the report zooms in on bleu green measures to make a healthy city, to make a climate adaptive city. Green blue infrastructure can reduce heat stress, reduce noise pollution, stimulate physical activity, regulate water quality, reduce stress, strengthen social interactions and improve air quality.

A last Australian strategy focuses on the idea of 'water sensitive cities'. This approach seeks to spatial integrated the catchment area of a river in the urban system and resulted in a *water sensitive urban design* (WSUD) approach.

WSUD is being defined by the Australian National Water Initiative 'the integration of urban planning with the management, protection and conservation of the urban water cycle, that ensures urban water management is sensitive to natural hydrological and ecological processes' (Wong, 2006; Wong & Brown, 2009). In England a similar approach is noted in the Sustainable Urban Drainage Systems (SUDS) (Woods et al., 2015). Both methodologies aim to integrate a natural water system in the urban area. To do this the focus lies on retention, infiltration, storage, treatment, adaptive water management and as last possibility drainage (fig. 2) (Timmermans, Jacobs, & van Hattum, 2017).

Fig. 1: WSUD (Timmermans, 2017, p. 22)
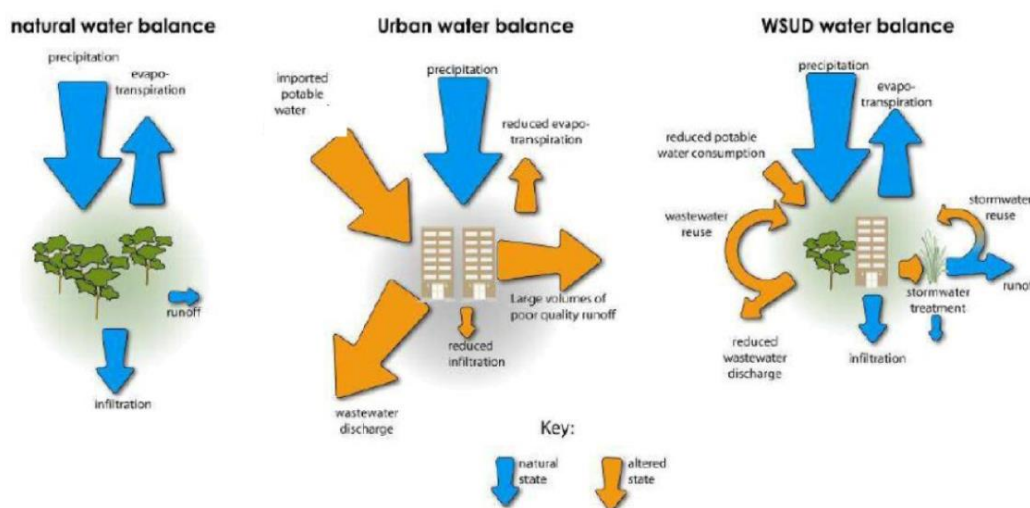
Fig. 2: WSUD water balance (Timmermans, 2017, p. 23)

WSUD focuses on the change of the water balance by integrating the natural system (infiltration, evapotranspiration, etc.) and reuse, as reinterpretation of the buffer capacity of the natural system, in the urban system (fig. 3). Coutts (2013) zooms in on the spatial implications of this approach (fig. 4). The combination of green/blue structures and a WSUD approach makes it possible to integrate water management, drought and UHI solutions into one approach. The question comes how these structures should be designed related to the existing ecological/landscape/urban structures.

Fig. 3: WSUD at micro scale (Coutts et al., 2013, p. 6)

I.III. LANDSCAPE LED DESIGN

The integration of a natural system into the urban tissue needs a specific design approach in order to strengthen the symbiosis. The search for an integrated concept in landscape management and planning has been going on some times and resulted in different concepts noted by R. Childs (SCAPE, 2017).

- *Ecosystem services – derived from the Millennium Ecosystems Assessment, and the related idea of Natural Capital –putting an economic value upon the benefits derived from these services.*
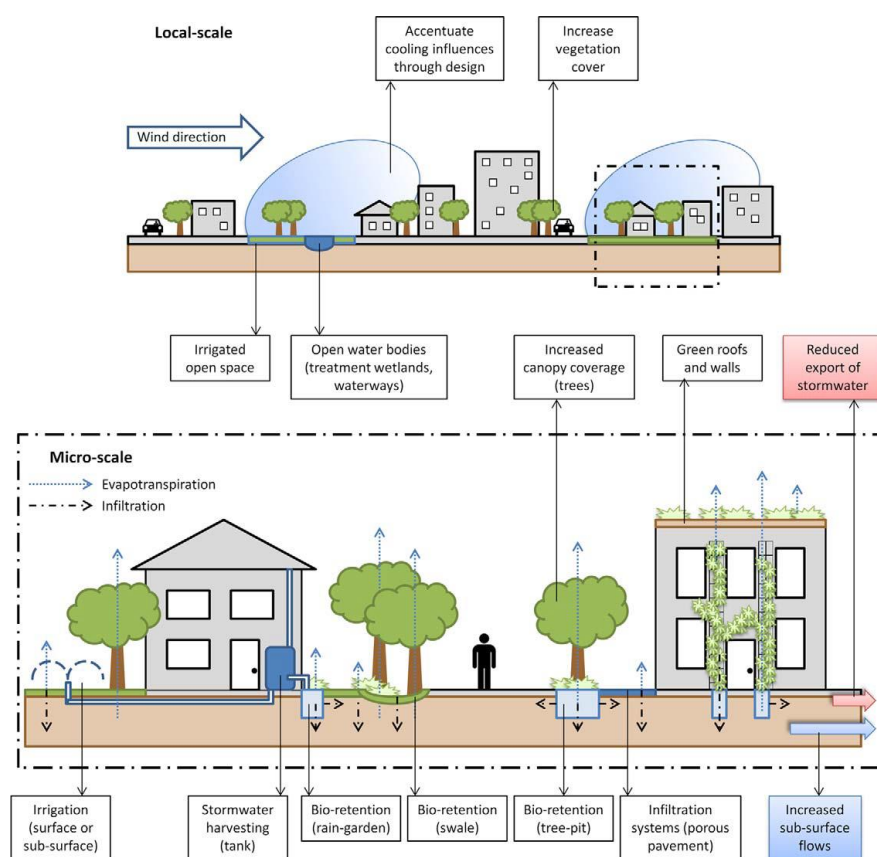- *Green infrastructure – a concept that is about managing natural habits, particularly but not only within urban areas, to deliver multiple benefits for people and wildlife.*
- *Landscape-led planning – an approach to planning and designing new development, ensuring designs respond to existing landscape character and importantly the way they function.*
- *The European Landscape Convention (ELC) – an equally integrative concept, because landscape is centred upon people and all of the thing they experience and value about a place, from tranquillity to wildlife.*
  (SCAPE, 2017, p. 7)

Landscape Led Design (LLD) and the ELC will be used as approach because of the holistic/system approach and the similarity with the system approach of WSUD.

The European Landscape Convention - The ELC is adopted by the Committee of Ministers on the 19 July 2000. In 2008 the Committee of Ministers added guidelines for the implementation of the ELC. Both documents will be used to sketch the content of the convention (Council of Europe, 2000, 2008). The ELC is a Treaty not a Directive there for it includes guidance and recommendations only.

The first aspect which is cited is a definition: *"Landscape" means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors."* This definition has some important aspect. First of all the definition doesn't make a distinction between urban or rural landscape this is note explicitly in article 2. All types and all grades of landscapes are in the scope of the convention. Secondly the perception of the people is an inherent aspect of a landscape. A value based approach to the landscape is important to look into the social context of the landscape. As a final remark on the definition natural and human factors are part of one system. Therefore the definition implicitly initiates a holistic approach.

The aim (art. 3) of the landscape sets to promote protection, management and planning of the landscape (art. 4-6) and do this in a European co-operation (art. 7-11).

To work on protection, management and planning the ELC states that it's important to recognize and integrate landscape in law and policies to enhance participation, to create awareness and to give training about the landscape. In order to take action different phases are noted by the convention. A first phase is to identify the landscape in its broad sense by using different approaches such as ecological, archaeological, historical, cultural, economic, social, etc. When this is done it's important to make an assessment of the different themes and note the changes and forces influencing the landscape. All this aspects should then come together in Landscape Quality Objectives. This objectives are integrated in the protection, management and planning of the landscape.

The European co-operation can be done by mutual assistance between different countries and by sharing information. Transfrontier projects can be an important aspect of working together. As a last aspect the monitoring of how the implementation of the ELC is shaping the landscape is an important cooperation between a country and the EU.

All these aspects are synthesized in fig. 5. As suggested the ELC sets a broad framework for the management, planning and protection of the landscape with a holistic and system approach.

LLD and Water management - The holistic approach the ELC sets for the protection, management and planning of the landscape is an interesting perspective in order to deal with a constantly changing landscape. The natural processes such as natural succession change the landscape but human, cultural factors even so influence the landscape.

A LLD concept stimulates the alignment of the people driven changes with the changes of the natural system. This approach is a proactive approach requiring thinking ahead and planning with the existing parameters. The described criteria in the ELC for analyses and assessment lead the way for a analyses of the existing parameters of the landscape (SCAPE, 2017, pp. 7–8). The water management system WSUD also seeks to align the natural water system with the urban system. So the LLD approach and the WSUD approach both seek interaction between human factors and natural processes. In the SCAPE project, the combination of WSUD and LLD wants to answer the challenges of climate change.

For this aligned approach, following on the guidelines noted in the ELC, we look into the way the ELC is implemented in the different partner countries. This should generate elements in order to develop a joint strategy in which a LLD approach and a WSUD approach are combined in a single strategy to combine the people driven and natural forces into a climate adaptive design.

II. IMPLEMENTATION OF THE ELC IN THE 2 SEAS AREA

We'll analyse the different policies in use in the countries of the 2 Seas area. To do so the thematic framework of the ELC will guide us through. This approach gives us the opportunity to make a two-way comparative analyse. A first between the intentions of the ELC and the way it's integrated in the policies and a comparison between the countries on the specific topics. Two main references are used *'Landscape planning at a local level in Europa'* (Sala et al., 2014) and *'Impacts of the European Landscape Convention on national planning systems: A comparative investigation of six case studies'* (De Montis, 2014) as basic information.

II.I. NETHERLANDS

In the Netherlands different governmental levels are involved in the protection, management and planning of the landscape. The decentralisation of the government suggests that the regional *(provincies)* and the local level are strongly involved. We shall focus on the province of Zeeland and the city of Middelburg (pilot) to give an overview of the different policies (fig. 8).

The national level is responsible for policies and for the areas with a national importance such as coastal regions, rivers, large nature reserves, etc. The provincial level for the area specific policies *(gebiedsgerichte werking)* which are involved in the facilitation of the realisation of the national policies. For example they are dealing with national landscapes and setting the cultural historical values of the rural areas. Municipalities are responsible for the implementation and realisation of the projects (Landschapsobservatorium, 2017; LNV, 2009; Rijksdienst voor het Cultureel Erfgoed, 2017a). How this decentralisation is working will be discussed in the different topics.

II.I.I. POLICY ANALYSIS

Implementation - The ELC was ratified in the Netherlands on the 9 June 2005. We see two ways in which it's integrated in the policy making. First the landscape is integrated in laws such as the *omgevingswet* and the *natuurbeschermingswet*. Landscape is a part of these laws but there isn't a law specific about the landscape. Besides the laws the national government and the civil society have set some notes with a long term vision regarding the landscape.

The national government have written the *nota landschap* and the *agenda landschap.* The *nota landschap* (LNV, 1992) is sketching a long term perspective on the landscape. The main target of this policy is to *promote the conservation, restoration and development of a qualitative landscape, a landscape where identity and sustainability are key.* With sustainability the policy refers to the 'Our Common Future report' or Brundtland report (UN & WCED, 1987). Identity is defined as the (a)biotic and cultural characteristics of an area and the perception of the people of that specific area. This is in line with the ELC.

In 2005 a new document was added, the *agenda landschap* (LNV, 2009). This document states a development perspective on the landscape with three topics: balance city-open space, landscape in co-production and sustainable financing of the landscape.

A last note is the *'landschapsmanifest'* a text written by civil actors in response to the ELC. This manifest states a vision on the development of the landscape in five objectives: awareness, liveable, development as a positive enhancement, landscape as part of policy making and new European cooperation's (Heijdeman, 2005).

Identification – For the identification of the landscape *Het Rijk*, national level, makes different maps of the landscape with different approaches. For example archaeological maps, cultural historical maps, geophysical maps,

etc. Organisations such as the *landschapsobservatorium*[2] (Landscape observatories) (Landschappen NL, 2017), *Landschap in Nederland* (Landscape in the Netherlands) (Rijksdienst voor het Cultureel Erfgoed, 2017b) and the *compendium voor de leefomgeving* (compendium for the habitat) (CLO, 2017) are doing this type of analysis. The *landschapsobservatorium* is looking into small landscape objects. *Landschappen in Nederland* is giving an overview of the different resources and maps on the landscape and the *Compendium voor de leefomgeving* sets a broad analysis. In the *Nota Landschap* (LNV, 1992, p. 18) the different landscape types are defined (fig. 6).
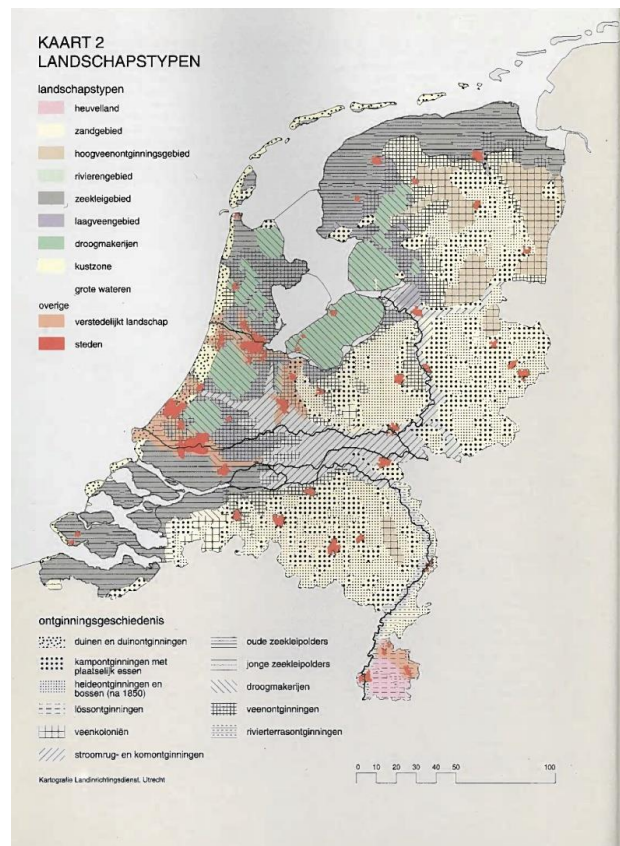
Fig. 5: Nota landschap-landschaptypen (LNV, 1992, p. 18)

On the regional level the different provinces are making detailed mappings of the landscape in Cultural historical value maps. Two examples can be found below (fig. 7). They are strongly differentiated so comparison is not easy but they identify the specificities of the landscape.

On the local level the *Landschapsontwikkelingsplannen* (Landscape development plans) and *Beeldkwaliteitsplannen (*Landscape quality plans) are mapping the landscape.

Assessment & Landscape quality objectives - Broad perspectives and objectives for the landscape are set on the national level in the *nota landschap* and the *agenda landschap.* Assessments for the different landscape types isn't done on the national level but the *Landschapsobservatorium* sets an evaluation of the different landscape area's focussing on the small landscape objects such as trees, hedges etc. Forces which are influencing the landscape is

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[2] As a part of the landschappen nl organisation which is involved in the communication about the landscape.

summary analysed in the *nota landschap* and the *agenda landschap*. Urbanisation, identity, mobility, the demand of space by the different sectors and the fringe area are the main topics.

Besides this analysis the values people allot to the landscape are analysed by doing questionnaires. This on the national level in the *Belevingswaardemonitor (*Amenity Value Monitor) (de Boer & de Groot, 2010) and for some provinces. On the national level people are satisfied with the landscape and give it a score of 7.6/10. Three questions are noted in this monitor: the attractivity, satisfaction with green in the neighbourhood and satisfaction with the landscape surrounding the city. The province of Friesland did this analysis on the local level to zoom in on the different values. They zoom in on associations with the landscape, the importance of the different functions of the landscape, worry about developments and the different responsibilities (Partoer & Provincie Fryslân, 2014).

On the provincial level for the protected landscapes an implementation programme is set. For example for the national landscape *Zuidwest Zeeland* (Provincie Zeeland, 2006) this programme defines an analyses of the qualities of the landscape, a description of the changes, a long term vision on the national landscape, actions and a financial structure.

In a LOP the first phase is to analyse the landscape and combine this with the developments of the landscape, the policies in the landscape regarding water, architecture and heritage to define objectives for the local landscape (van Herwaarden, 2002).

Protect, manage & planning - The *nota landschap* involves two different instruments to handle the landscape. Landscape building in which the landscape is being shaped and landscape maintenance to confirm a new or old image for a landscape. Landscape building can be involved in the integration of new functions and in the redevelopment of old patterns. As the Netherlands is a decentralised country the national government only facilitates to do so a *handreiking landschappen* (LNV & VROM, 2006), a manual to review the way landscape can be developed, is written. It zooms in on the responsibilities of the different governmental levels, it sets a frame to develop quality landscapes, financing, etc.

On the regional level a cross sectoral strategic vision for the entire territory is written. A specific chapter has been written regarding the landscape. This states that it's important to maintain, strengthen and to maximize the qualities of the landscape. The maintenance focuses on the analyzed qualities of the landscape and forces reducing the qualities. The development sets new possibilities for special projects regarding housing, recreation and care institutions. This needs to be in synergy with the context. This objectives have led to two actions: "protection and development of landscape quality" and "enlarge the economic benefits of the landscape" (Het Zeeuwse Landschap, 2017).

The regional and the local level can develop LOD's. These plans set long term perspectives on the landscape to enhance the quality of the landscape. After analysing and setting objectives for the landscape different development scenarios are developed to generate a vision on the defined area. This vision results in a financial and realisation plan (van Herwaarden, 2002).

A BKP is focussing on the esthetical part of the landscape and writes guidelines to strengthen the visual quality of a local or regional area. A BKP is focussing on the one hand on the specific esthetical quality of a feature and on the other hand on the incorporation of this feature in his context. To write a BKP there isn't a standardised procedure.

Participation, Knowledge and training

INSTRUMENTS: Participation between the different governmental levels in a decentralised governmental structure is important to set a consistent policy. In the *handreiking kwaliteit landschap* are the different responsibilities

noted. On the national level an advisor (rijksadviseur) coordinates with the different levels. On a local level a landscape coordinator is in charge of the communication with the local and regional stakeholders.

Because of the important relation between the levels the regional level gather in a supraregional organisation *Landschappen NL* which represents the regional level and the regional organisations on the national level.

Participation is also encapsulated in the local, regional instrumentarium in which the relevant stakeholders are part of the process. In the development of a LOP it's stated that communication in the process of making the plan and when realising the action plan it's essential to communicate to strengthen awareness. When writing a BKP it's important to involve the local stakeholders to identify the fundamental values concerning the image of the landscape and to integrate these in the plan.

VOLUNTEERING: In the *Agenda Landschap* participation has been included as one of the focal points. As noted above it's done structurally on the different governmental levels. On the local level we can note that voluntery involvement in the management of the landscape is also substantial. NGO 'Het Zeeuwse Landschap' is an area specific organisation maintaining nature area's in de province of Zeeland. To manage these area's volunteers can cooperate (Het Zeeuwse Landschap, 2017). *Stichting Landschapsbeheer Zeeland* states to manage and enhance different small landscape objects.

Monitor - On the national level some monitoring is done by the *Landschapsobservatorium* by analysing how the quality of the landscape object evolves. The *compendium voor de leefomgeving* analysis evolutions in the landscape such as the use of space by different functions. The value given to the landscape by the people is monitored by the *belevingswaardemonitor* done in 2001 and 2009.

On the local level the monitoring is integrated in the LOP when evaluating the realisation of the realisation plan.

Relation with other domains – The relation with other domains is specified on the three governmental levels. On the national level there are some interaction with urban planning and heritage (fig. 7). The policy about urban planning is specified in the *nota ruimte* (VROM, 2006). It sets from a sector approach spatial structures concerning housing, economic, nature, water, national landscapes, agriculture, etc. An important aspect is the long term development of areas for housing in areas with rich nature. Efficient building is the guideline in order to protect the green spaces.

The relation with heritage policies is set in the *nota belvedere* (LNV & VROM, 1999). This policy aims to set the cultural historic identity as a stronger directional aspect in the design of space. To do so an area specific approach is needed to enhance the identity of an area and to combine it with new developments.

On the regional level we noted the *omgevingsplan* as one of the instruments to set a long term perspective on the development of the area. A specific topic considering the landscape was noted as we saw above. This perspective is integrated in a global cross sectoral approach and vision on economic, nature, etc. development. Besides this long term perspective a juridical instrument *verordening ruimte* (Provincie Zeeland, 2012) is part of the urban planning policies but has an influence on the landscape because this legislation has a direct impact on the spatial possibilities and the content of the zoning plans. About habitation the *verordening* states that new housing developments in rural area are subjected to specific considerations. Besides this in a rural are the development possibilities of different agricultural companies are noted. For the landscape there's stated that when a zoning plan is made an explanation of the landscape values needs to be incorporated and that the rules needs to focus on the maintenance and protection of this landscape.

The city of Middelburg is using four urban planning instruments which influence the development of the landscape. A first important instrument is the zoning plan as set by the *Wet ruimtelijke ordening* (Winsemius, 2006) and the *besluit ruimtelijke ordening* (Cramer, 2008). This plan sets the development perspectives for the entire area of the city. A second instrument the *Nota Ruimtelijke Kwaliteit* (Gemeente Middelburg, 2016) sets rules for the entire territory of Middelburg which should be followed when realising a building. Criteria considering context, shape, scale, detail, facade, materials are described. For the different areas of the city some specific criteria are noted. In relation with the landscape the criteria focuses on the integration in the context.

The third instrument is linked to the landscape instrument BKP described above. The main objective is to set the spatial quality for a project combining urban planning, landscape, architecture and cultural history. The relationship between the BKP and the other urban planning policies is therefore important (Gemeente Middelburg, 2016).

A last smaller instrument is the *groenbeleidsplan* (DC groep bv & Sakko, 2006)*. This plan is setting a green structure, detailed in an ecological structure, public green spaces on the level of the neighbourhood and specific green elements in the city. This green structure is detailed on neighbourhood level and sets an action plan for the development of green spaces, the management of green elements and the quality aspects of the green space.

Financial - On the financial level the different instruments can be categorised in three categories. A first category is related to structural financial support from the national level. Financial assets are given in relation with heritage of the landscape, the maintenance, to strengthen the spatial quality, in order to develop a LOP or investment budgets for open area's or urban renewal. This category is part of a distribution of funds. A last type of financial instruments is to transform taxation, to integrate exceptions in order to reward people or companies. For example some income can be tax-free if people invest in the landscape.

A second category is focussing on smaller projects of specific landscape objects. They are involved in a second type of financial instruments. An instrument is focussing on the development of housing in the landscape or on the revitalisation or reuse of buildings in the landscape. A second instrument is looking into regional funding to realise some projects. But a last important type of financing on the local level is to involve businesses to sponsor projects, to co finance some projects or to look for financing by the public. *Nederland mooi* is an organisation which tries to facilitate this last approach (LNV & VROM, 2006).

A finale type of financing is incorporated in the maintenance of the landscape. For landscape elements in the rural area financing is given by the *subsidiestelsel natuur- en landschapsbeheer (SNL).* For elements in the other areas financing is on a regional level integrated in the *stichting landschapsbeheer Zeeland* (Landschapsbeheer Zeeland, 2017)*.

II.I.II. THEMATIC REFLECTION

	Pro	Contra
Identification		The cross border comparison of identification isn't easy because of the absence of a global framework.
Assessment	Each level sets clear objectives in their instruments.	The interrelation between the different levels when setting objectives isn't clear.
Planning	The instruments give tools for functional and esthetical landscape planning.	

Participation	The coproduction of the civil society with the citizens generates involvement. The landscape coordinator functions as central contact concerning the landscape.	
Monitor	The *belevingsmonitor* is an important instrument to zoom in on the evolution of the values concerning the landscape.	There is only a strategy for monitoring on the local level integrated in the LOP.
Relationship	The division of responsibilities between the different governmental levels is define.	
Financial	A structural financing is implemented and combined with private financing.	

II.II. UK

When analyzing the local policies in the UK we shall focus on the City of Brighton & Hove.

II.II.I. POLICY ANALYSIS

The framework set for the implementation of the ELC in England defines five key measures and actions

- Improving performance within the current legal and regulatory frame
- Influencing future legislation, regulation and advice, including contributing to gap analysis
- Improving the understanding of landscape character and dynamics, and the monitoring of change and trends
- Engaging people through comprehensive and accessible awareness and understanding activities as well as through, promotion, education & training.
- Sharing experiences and best practice. (Defra & English Heritage, 2009, p. 3)

Implementation - The UK has ratified the ELC on 26 November 2011. The UK hasn't formally voted a law regarding the landscape. Some other relevant laws regarding the rural area exist. The juridical framework regarding the landscape can be found in the Environment Act (UK Parliament, 1995) and the Natural environment and rural communities Act (UK Parliament, 2006).

Besides these acts which aren't rewritten when implementing the ELC a Framework for the implementation of the convention is written (Defra & English Heritage, 2009). A first important note was to propose not to change the existing policy or legislation. Two actions are being substituted to develop the guidelines of the convention. A project group was set up in which Defra, Natural England and English Heritage have their seat. And a specific instrument is introduced the *ELC Action Plan*.

Identification - The identification of the landscape is been carried out by the different governmental levels with different instruments. On the national level different maps are being made The Landscape cover map, national landscape character map, historic landscape character assessment and Countryside character initiative map the different landscapes. These are overview maps characterising the entire territory. Another manner of surveying the landscape is done by the countryside survey in the form of a field survey. In this instrument a detailed study of samples of 1km² is made. The individual squares are chosen so that they represent all major habitat types. On these squares information such as vegetation, streams and ponds, collecting soil samples, etc. are investigated (Countryside Survey, 2016).

The Countryside Character Initiative is a programme of information and advice on the character of the countryside. It concerns a characteristic of the landscape and guidance document on how to undertake the Landscape Character Assessment (The Countryside Agency, 2016).This assessment describes a method by which the regional and local level should map the landscape (The Countryside Agency, Scottisch Natural heritage, Swanwick, & Land Use Consultants, 2002). The main objective of this assessment is to give *"techniques to identify what gives a locality its own sense of place and makes it different from other areas, and which conditions should be set for any new development and change"* (The Countryside Agency et al., 2002, p. VII). This goal in mind shows us that it isn't only identification which is important. Classification and the description of the character are even important. This objective approach is complemented with a judgemental part to inform different decisions.

The assessment gives some basic ground rules which leave some flexibility to answer the different local circumstances. Four principles are the core of this instrument: emphasis on landscape character, a strict division between characterisation and judgement, objectivity and subjectivity are integrated in the process and the

potential to use this approach on different scales. We will look into this assessment by analysing the two phases: characterisation and judgement because these are two main objectives of the ELC. The detailed process flow can be found as appendix 1.

The characterisation of the landscape defines landscape character types, homogeneous generic landscapes with similar combinations of geology, topography, drainage, etc. Landscape character areas are discrete geographical areas with a specific type. The combination of types and areas with a value-free description is the final output of the characterisation phase. Forces for change such as land use change can be noted as well. They stay on an objective level

Assessment & Landscape quality objectives – The second, judgement phase shall zoom in on the subjective part of the assessment and aims to inform decisions about the landscape. Besides the scales of the judgement different approaches to judgement can be used: landscape strategies, landscape guidelines, attaching status to the landscape, landscape capacity. The judgemental process integrated in the LCA gives directions for the integration of different objectives in other domains.

To zoom in on the LQO we start with the objectives set on the national level. The Countryside agency makes an assessment include changes and forces which influence the landscape on a national level and set objectives for the development of the landscape in a note "The state of the countryside 2020" (Countryside Agency, 2003). The development of the countryside needs to take care of fragmentation, cohesion and sustainability. When over viewing this changes four scenarios are possible: Go for Green!, The triple whammy, All on board! And The countryside means business (fig. 9).
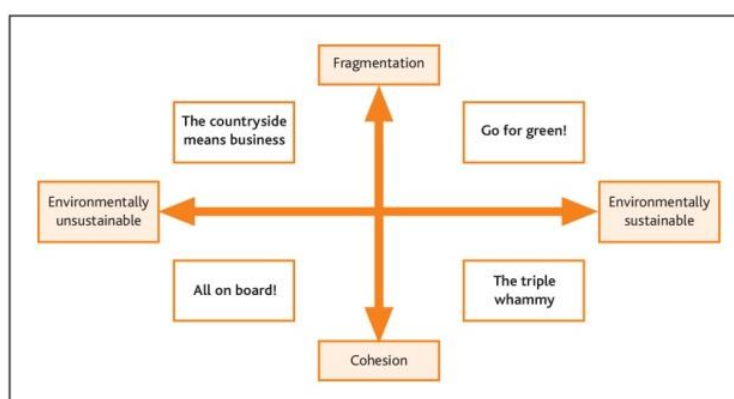

Fig. 6: The state of the countryside 2020 – Scenarios (Countryside Agency, 2003, p. 27)

In order to make good assessments the study of changes is important as stated by the ELC. To do so the Countryside Agency in partnership with Defra, English Heritage and English Nature started with the Countryside Quality Counts. The aim of this instrument is to track changes in the Character Areas of England (Countryside Agency, 2004). The changes are monitor against the Character Area Profiles as noted by the Countryside Agency. Two aspects of the change were investigated. If there was a change in the countryside character and second if the change was positive or negative. This last normative question involves objective and subjective measures by which the public opinion is one aspect. This resulted in a quotation matrix.
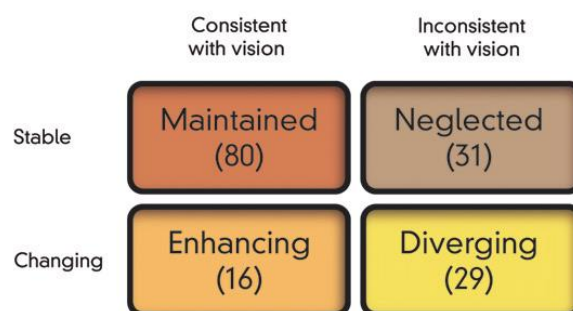
Zooming in on the intermediate level organisations which are involved in the landscape can *write ELC Actions Plans* a guideline is developed to do so (Natural England & Land Use Consultants, 2009). Organisations on the different scales and on the different landscapes, urban, rural or fringe can realise an action plan. This instrument is seen as a key vehicle through which the aims of the ELC will be implemented. An ELC action plan is made of three main parts, a baseline zooming in on the current position of the organisation in relation with the landscape, the objectives for the future and the actions and processes to achieve the objectives. Natural Engeland, an organisation on the national level involved in the development and management of the landscape, has made an ELC action plan. It's focussing on placing *"landscape and people at the heart of social, economic and environmental decision making so that future generations inherit the highest quality landscape possible* (Natural England, 2009)*.* The actions are noted on specific topics starting with a baseline, actions and timing.

In order to plan the landscape on the local level Green infrastructure plans (Gale & Natural England, 2009) are an instrument to do so. Green infrastructure is defined as: *"Green Infrastructure is a strategically planned and delivered network comprising the broadest range of high quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering those ecological services and quality of life benefits required by the communities it serves and needed to underpin sustainability. Its design and management should also respect and enhance the character and distinctiveness of an area with regard to habitats and landscape types."* (Gale & Natural England, 2009, p. 7)

Three aspects from this definition are interesting, the ecological services, the quality of life benefits and its relation with the genius loci of a space. They are used in urban, rural and in the space connection both. This approach is in support of the ELC convention and the definition of the landscape note in the convention completed with education, communication and monitoring. The targets which are set in *the Green Infrastructure Plans are* translated into Local Area Agreements (LAAs). The Local Strategic Partnership (LSP) choose indicators that will best help achieve the priorities, set targets for each year of the LAA's three year timeframe. These targets can be designated targets relating to the 198 National Indicators, such as flood risk management, or non-designated targets or local targets chosen by LSP.

Protect, manage & planning – Green infrastructure plans set development perspectives and map the possibilities. Here you see an example of a strategic and local green infrastructure network.

Map Showing Designated Wildlife Sites and NSN compared with othe Biodiversity Areas

Statistics:

City Population: 251900

Within City Boundary:

Total area: 8265 hectares
Total area Natural/Semi Natural Greenspace: 709 hectares
Percentage Natural/Semi Natural Greenspace of total area: 8.6
Area per 1000 population: 2.8 hectares

Within Built Up Area:

Total area: 4250 hectares
Total area Natural/Semi Natural Greenspace: 99.8 hectares
Percentage Natural/Semi Natural Greenspace of total area: 2.35
Area per 1000 population: 0.4 hectares

Legend
- Designated Wildlife Sites
- Open Space Natural Semi Natural
- Potential Core Areas
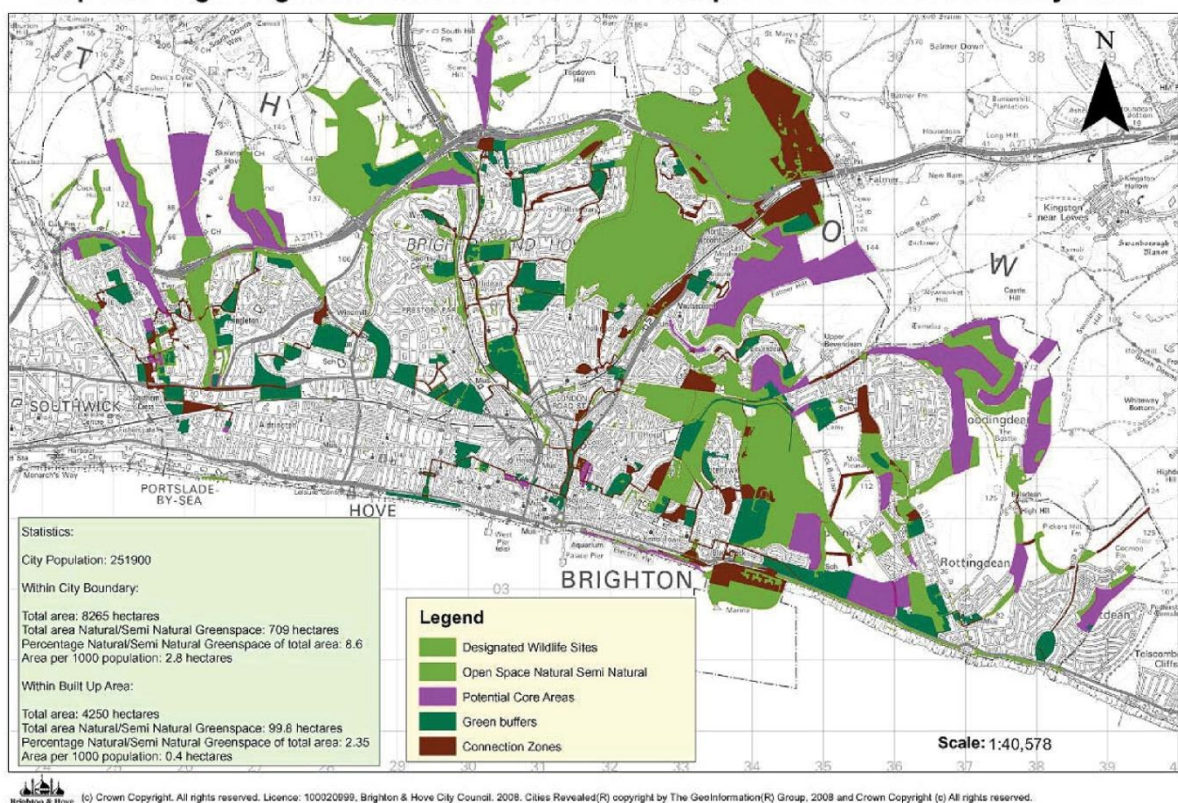- Green buffers
- Connection Zones

Scale: 1:40,578

Fig. 8: Green infrastructure Brighton & Hove (Brighton & Hove City Council, Sussex Wildlife Trust, & Susses Environment Partnership, 2009)

Participation & Knowledge and training

INSTRUMENTS - In the Landscape Character Assessment the involvement of the stakeholders is important. Stakeholders can be professionals or people who have a particular concern in the landscape. Involvement can be *"through direct involvement in management of the land, through their knowledge of an interest in a particular subject, or because they have an attachment tot particular places, as residents or visitors."* (The Countryside Agency et al., 2002, p. 15). If we look into the flow diagram (appendix 1) of the LCA involvement of stakeholders. A project specific approach of participation is necessary.

A second important instrument in the UK landscape policies is the ELC action plan (Natural England & Land Use Consultants, 2009). The ELC Action plans are made by different organisations. A first important part of their participation is to develop ownership in the entire organisation. A broader participation perspective is set preparing an ELC action plan. Each of the six steps (fig. 12) can be fed by dialog and engagement to strengthen the plan.
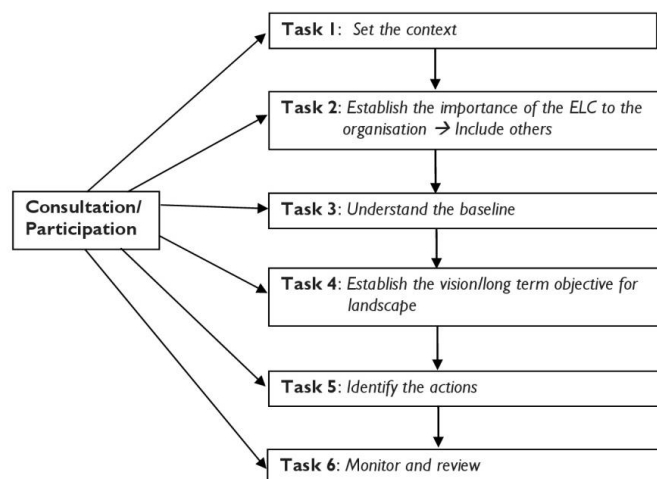
Fig. 9: Proces for preparing an ELC action plan (Natural England & Land Use Consultants, 2009, p. 8)

A last instrument in which participation is embedded is the green infrastructure plans. To support the planning authorities a GI advisory group is involved in the process (fig. 13). In this GI advisory group different stakeholders such as official bodies of the local administration with owners or local community groups (Sala et al., 2014, p. 62). Besides this structural participation in stage 5 'Examination in Public' the plan is presented to the public.
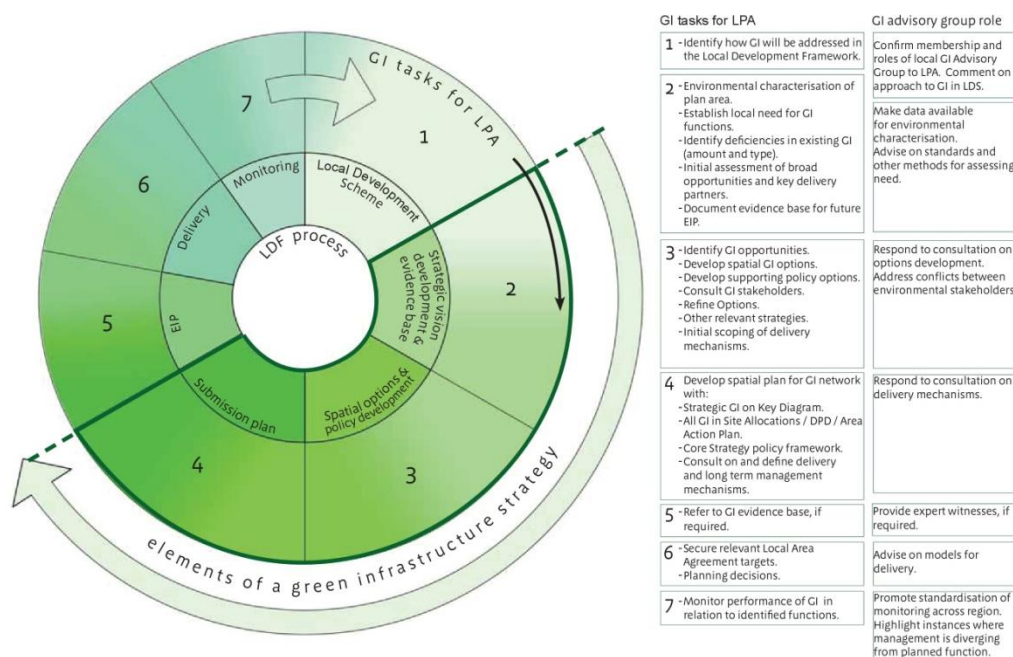

Fig. 10: GI process (Gale & Natural England, 2009, p. 47)

VOLUNTEERING - The participation model on the local level is set by the community engagement framework (Brighton & Hove City Council, 2008) written by the Brighton & Hove City Council in corporation with lots of partners. This corporation leads to a framework which isn't only in use by the city but even so by the private, community and voluntary partners. It aims to raise the profile, improve the quality and achieve a better coordination of community engagement. This by setting actions for engagement by informing, consulting, involving, collaborating and empowering of the different actors. The sustainable community strategy (SCS) written by a combination of local stakeholders grouped in a new organisation 'Brighton & Hove Connected' (Brighton & Hove

Connected & Brighton & Hove City Council, 2017) is one of the elements realised from the framework. This association assembles the different civil organisations in order to deal with some important problems like inequality, climate change, etc.

On the other hand organisations such as Natural England, National trust, Landscapes for life, etc. gather a group of volunteers which help in the management of the landscape. If we consider the scale of such organisations the landscape awareness is width spread. An important volunteering activity implemented by the city council is the volunteering in city parks and with rangers. This active way of cooperation is involved in the maintenance of the public green space of the city (Brighton & Hove City Council, 2017). When volunteering isn't implemented by the city citizens sometimes group in Local Actions Teams (LAT) or Community Action Teams (CAT).

When looking into specific community involvement into urban planning questions a specific statement is written (Brighton & Hove City Council, 2015). It sets a framework on how participation will be integrated in the different planning instruments.

Monitor - On the national level the implementation of the ELC was translated in a strategy baseline for, and monitoring of the impact of, the European Landscape Convention in the UK. (Newcastle University Landscape Research Group, 2009) This wanted to zoom in on the changes made in legislation, policy and other activities done after the ratification of the ELC. The overall conclusion stated that the policies in the UK where in line with the convention. But the landscape protection is stronger developed then management and planning, LQO aren't well developed and the fact that each sector is framing landscape on a different manner. A better framing of the landscape is needed.

The Countryside quality counts (Countryside Agency, 2004) is a way of monitoring the evolutions of the landscape itself. It's a valid instrument to identify the problematic area's in which intervention is needed.

Looking at a regional level the monitoring is happening in the ELC action plans (Natural England & Land Use Consultants, 2009). The timing related to the different actions is evaluated to see if they are implemented. These results are reflected with the involved stakeholders and the project group. This reflection is important to be involved in a wider monitoring.

On the local level the 7th phase of a Green infrastructure plans is monitoring the effects of the plan. Site inspections can be done to ensure planning conditions are met. If some specific functions should be analysed a correct instrument should be used.

Relation with other domains – The relationship between the different landscape instruments and urban planning is a first aspect to discuss (fig. 14). The LCA is a important instrument in landscape planning but it's also used in urban planning as a way of gathering information in an analytic phase. The importance of integrating landscape as a layer in a primary phase is because of the influence of new developments on the landscape is significant. In contrast with this observation we see that historically the development plans focused on heritage landscapes or high value landscapes or individual landscape features. The Planning Policy Guides n°7 states *"The priority now is to find new ways of enriching the quality of the whole of the countryside whilst accommodating appropriate development, in order to complement the protection which designations offer"* (The Countryside Agency et al., 2002, p. 62). The information of the LCA can for example be integrated in the core strategy of the local development framework, in studies of development potential, in environmental impact assessment, in England the Sustainable Development Strategy for Better Quality of Life and the Rural White Paper. They all use the LCA as a basis for decision making (Sala et al., 2014, pp. 94–95; The Countryside Agency et al., 2002).

Concluding the contribution LCA can make to planning can be noted as follows:

- *It identifies which landscape and cultural characteristic a particular territory has.*
- *It keeps track of the changes to the landscape.*
- *It allows the sensitivity of the places to possible changes or transformations to be revealed.*
- *It facilitates decision making on the conditions that need to be taken into account in view of the possible changes or transformations of the territory.* (Sala et al., 2014, p. 95)

These contributions are made on different scale levels and in different planning instruments. It's important to zoom in on the application of the LCA in landscape conservation and management (National parks and Area Of National Beauty). The LCA can be used, as in urban planning, to inform policies as local plans, development plan documents, etc. Besides this it's evenly important to use the LCA to actively involve different stakeholders. For example many local authorities use LCA to assist development of non-statutory countryside strategies or specific landscape strategies. On the other hand when an area has been selected for national conservation a LCA can help to define detailed boundaries (The Countryside Agency et al., 2002).

The green infrastructure plans have an important relationship with urban planning (fig. 14). To deliver green infrastructure on an effective way relations with other policies is important (Gale & Natural England, 2009, p. 41). As noted in figure 15 the relationships are numerous. We will focus on these with landscape development and urban planning as a synthesis of both landscape and green infrastructure approach.

The relationship with LCA and the ELC is situated in integration of a synthetic vision on the landscape and the objective to develop a vision. The GI translates this vision in a concrete plan. The relation with urban planning is much broader with a direct relation to realise the green infrastructure plans. *The Sustainable Community Strategy (SCS) is the overarching strategy for promoting and improving the well-being of a local area and provides the vision to inform the spatial planning process. (...). Lead officers within the local authority and other local green infrastructure stakeholders should therefore actively engage with the Local Strategic Partnership (LSP) to ensure that the importance of green infrastructure is understood* (Gale & Natural England, 2009, p. 41)*.*

A second thought is considering the Local Area Agreements translated in LAA targets. This are a set of priorities for a local area agreed between central government and a local area as represented by the LSP. This can involve some actions linked to green infrastructure. But if we want to deliver improved or extended green infrastructure not only planning is involved a lot of other partners should be involved.

A last attention point is to promote the integration of green infrastructure into development plans. This should be done at an early phase when the vision is detailed, should be evidence base, should be integrated in development of spatial options and policy, and should work through at the delivery stage. Looking the other way around from planning to green infrastructure each plan should be evaluated in the mindset of green infrastructure.
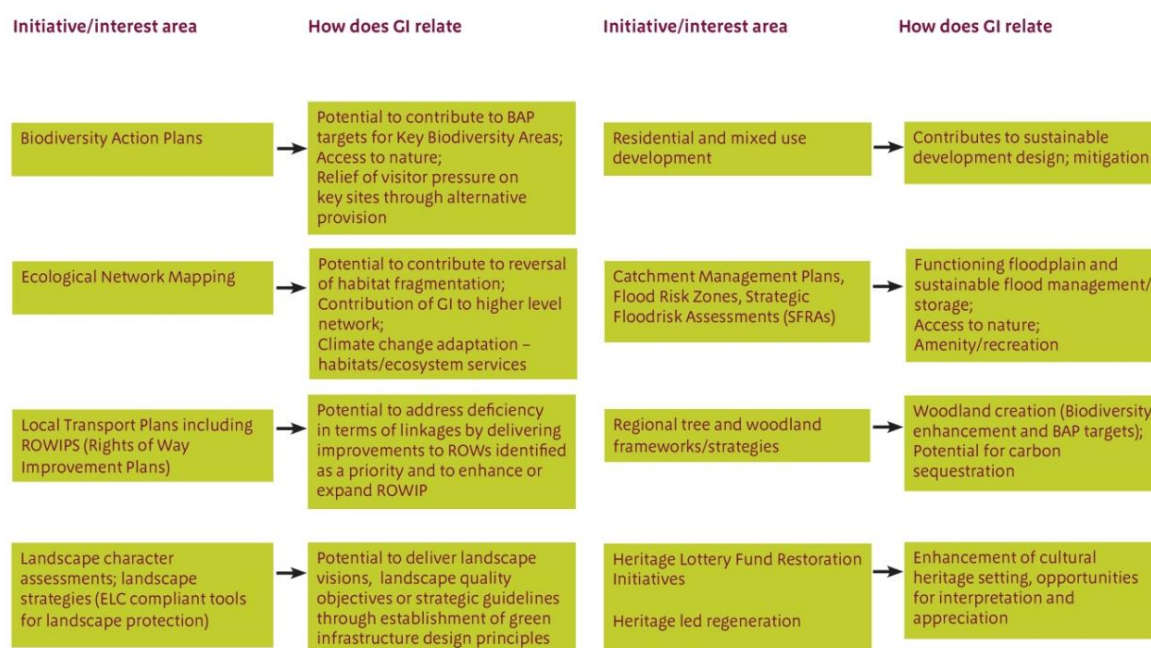
Fig. 11: GI Relationship with other domains (Gale & Natural England, 2009, p. 42)

The Brighton & Hove Green network plan (Brighton & Hove City Council et al., 2009) states that the structure developed shall be implemented in the planning system. Important to note is the focus, people and species oriented, used when developing this plan is ignoring some geographical, hydrology and landscape factors. The plan states that these factors are of secondary importance.

A last topic to cover in this part on the relation between landscape policies and the other governmental domains focuses on the relationship with heritage. Some landscapes are featured as heritage for example Areas of Outstanding National Beauty (AONB), Heritage coast, etc. For these specific areas a heritage management plan can be made in which the protection, management and planning of the area is described (Landscape for Life, 2017; Natural England, 2016a, 2016b).

Financial – The way landscape development is financed is project based with instruments such as Countryside stewardship, environmental stewardship and heritage lottery fund.

II.II.II. REFLECTION

	Pro	Contra
Identification	The combination of a global analysis and a detailed sample analysis give a profound inventarisation. The LCA implements a framework for analysis of the landscape which makes cross regional comparison possible.	
Assessment	A lot of instruments, on the different scales, set objectives for the landscape.	QLO are integrated in action plan on the local level but global objectives on the national level are lacking.

| Planning		Specific instruments for the planning of the landscape are absent. Planning is done by urban planning policies.
Participation	Natural England makes interaction between regional entities possible. This in combination with the Landscape Character Network and their interaction with citizens set a broad co-production process.	
Monitor	Monitoring is executed on different levels to evaluate the quality of the landscape and the landscape policies.	
Relationship		The focus of the policies is on the rural landscape.
Financial	A structural financial model is operational.	
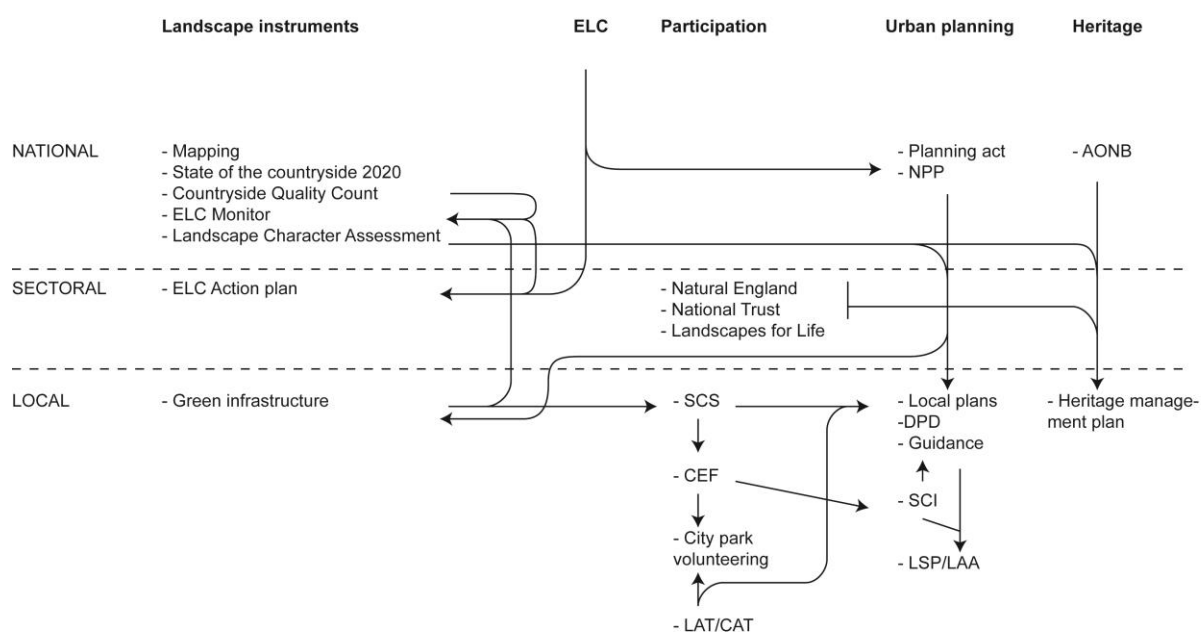
Fig. 12: UK Landscape policies

II.III. FRANCE

Zooming in on the landscape policies in France we shall look into the policies of the part of France in the *2 Seas area.* This area is caught in the region Hauts-de-France but only four of the five departments are part of the 2 Seas area, Nord, Pas-de Calais, Somme et Aisne. The department of le Nord shall be our focus of the local policies. Other governmental levels such as Districts, Townships haven't any influence on the landscape policies. But the towns, *communes,* and their *intercommunalités* (group of towns working together for example on the topic of urbanism). As an example we will zoom in on the town of Lille part of the *intercommunalité Métropole européene de Lille* (ERDF, 2017; MEL, 2017; Région Hauts-de-France, 2017; Vacher, 2017).

II.III.I. POLICY ANALYSIS

Implementation – France ratified the ELC on the 1st of July 2006. The ratification of the landscape convention is part of al long tradition in France concerning planning and managing the landscape (Sala et al., 2014). The *loi paysage* (law on the protection and valorisation of Landscapes) was an important step because the emphasis in the policies changed from exceptional or touristic landscape to an emphasising on the territory as a whole. This broader approach goes hand in hand with a better integration in planning policies (Royal, 1993). This law has been integrated in a new law voted in 2016 *La loi pour la reconquête de la biodiversité de la nature et de paysages* (Royal, 2016). Regarding the landscape this law states the following: protect biodiversity and the landscapes, use nature as inspiration for the answer on climate change and the establishment of a new agency for the protection of the biodiversity.

Besides this law the minister responsible for ecology, sustainable development and energy which is responsible for the landscape policies has written a roadmap on the landscape for the forthcoming years. This roadmap states that the landscape needs to be reoriented to a landscape in the age after petrol. This in order to give an answer on climate change. Three important actions, for the planning, management and protection of the landscape are noted. The integration of the landscape in the third national plan on health and environment, the generalisation of the landscape plans to realise supra local objectives and the inscription of the natural heritage in the public participation of heritage (Royale, 2014).

Identification – On the level of the department a landscape atlas has been developed on the level of the department, a regional level. For the former region Nord – Pas-de Calais an landscape atlas has been made. This related to the framework set by the national government in *Les Atals de paysages. Méthode pour l'identification, la caractérisation et la qualification des paysages* (Franchi, 2015). This sets the framework for the landscape atlas but this inventarisation is detailed in detailed analysis for each specific landscape type. For example for the metropolitan area a specific document has been written[3]. The inventarisation as first topic should focus as well on the natural and cultural aspects of the landscape by making an inventarisation on the features of the landscape and on the structures in which these features are integrated. These structures are interrelated with each other and make the framework on which planning, management and protection of the landscape shall be based. But interact even so with the social dimension, values allotted to the landscape by the inhabitants, should be analysed. The description of the structures is important but has to be accessible for non specialist, the visual representation does so (fig. 16).

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[3] This guidelines are written after the completion of some landscape atlases on the regional level. Some inconsequence can for this reason occur between the national level and the regional level.
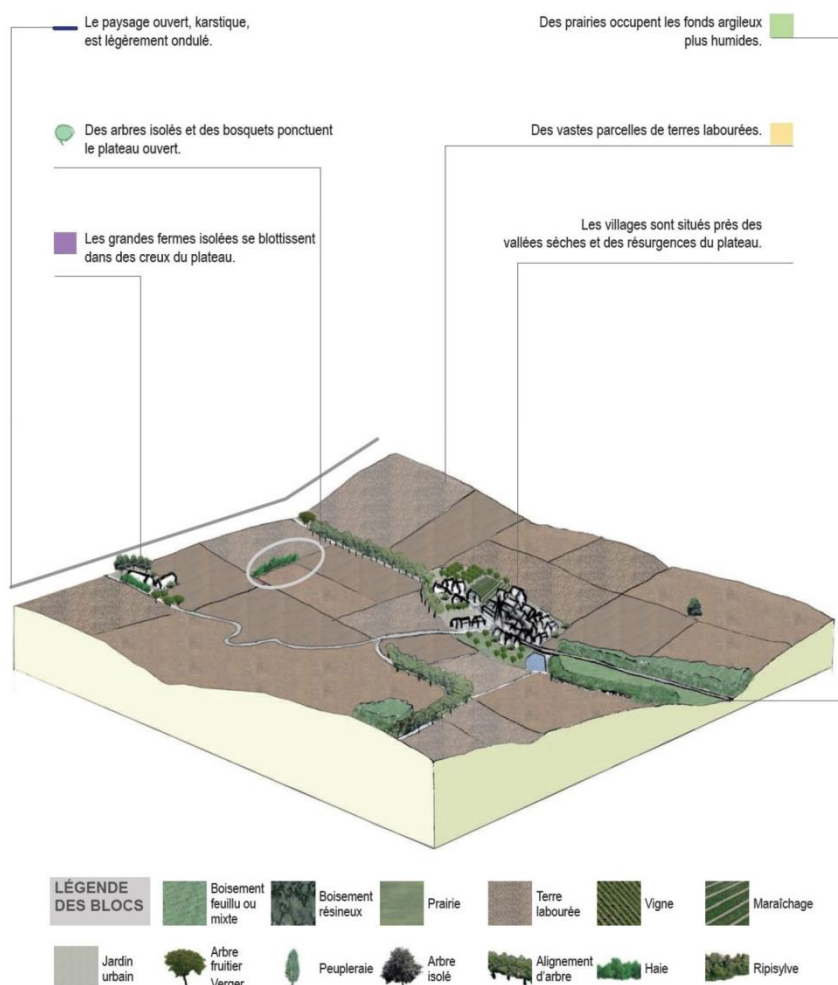
Le paysage ouvert, karstique, est légèrement ondulé.

Des arbres isolés et des bosquets ponctuent le plateau ouvert.

Les grandes fermes isolées se blottissent dans des creux du plateau.

Des prairies occupent les fonds argileux plus humides.

Des vastes parcelles de terres labourées.

Les villages sont situés près des vallées sèches et des résurgences du plateau.

LÉGENDE DES BLOCS — Boisement feuillu ou mixte — Boisement résineux — Prairie — Terre labourée — Vigne — Maraîchage — Jardin urbain — Arbre fruitier Verger — Peupleraie — Arbre isolé — Alignement d'arbre — Haie — Ripisylve

Fig. 13: Block Diagramme Landscape structures (Franchi, 2015, p. 34)

The landscape atlas written for the Region Nord – Pas-de-Calais dates from 2005 (Emerand, Durieux, Raevel, & Ingéniérie, 2005). The inventarisation of the landscape atlas starts by analysing the different structures, relief, Geology, hydrology, etc. A second topic zooms in on the history of the landscape, icons, touristic aspects and remarkable topics. A next topic is zooming in on the éco-complex, the agricultural situation and the urban tissues with their economic structures. This resulted in a map of the region (fig. 17).
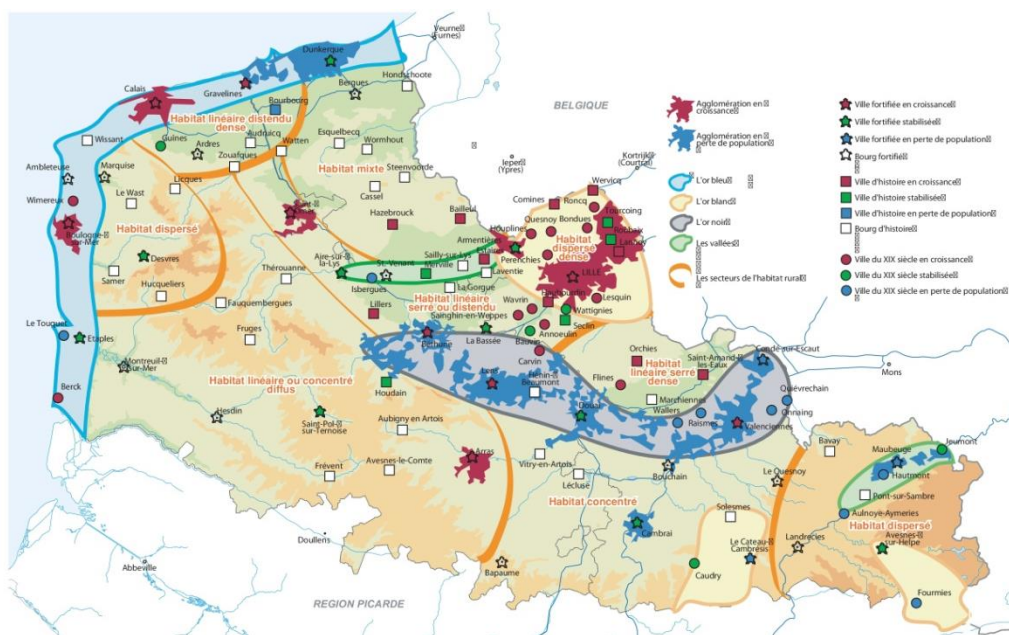
Fig. 14:Atlas de paysages Nord - Pas-de-Calais Synthèse (Emerand et al., 2005, p. 91)

The global analysis of the region is accompanied with detailed analyses of the different landscape type (Direction régionale de l'environnement Nord - Pas-de-Calais, 2008). This atlas looks deeper in the specific topics of the atlas of the region with the same approach

Assessment & Landscape quality objectives – The guideline for the landscape atlas zooms in on different elements of the assessment process: qualification, Identification, dynamic and challenges. The qualification of the landscape starts by zooming in on the social structure and the value system associated with the landscape. This on a global, societal level and on a local, communal level and the interaction between both social systems. This is an essential element for the landscape atlas. Combining the inventarisation with the qualification, landscape types are identified. A landscape type can be defined by a coherent territory with uniform structures and with equal social values regarding the landscape. The interaction between these three elements is of great value (see fig. 18).
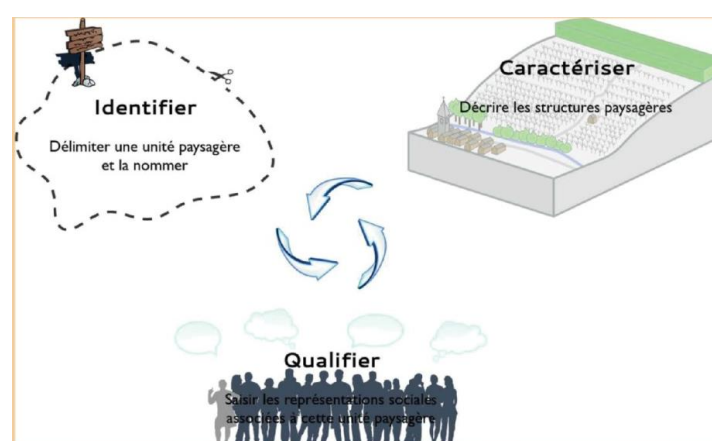

Fig. 15: Assesment (Franchi, 2015, p. 39)

In order to give a broad analysis of the landscape the inventarisation of the dynamics influencing the landscape are an essential part of the landscape atlas. The guideline suggests to zoom in on evolutions of the material and

immaterial aspects of the landscape and there specific timing. These forces can exterminate on the global level of the landscape but also on the local level of a specific landscape type. A last aspect, which is strongly related to the forces influencing the landscape, are the challenges of the impact of other domains on the landscape such as urban planning, economy, etc. This external factors contrast with the internal dynamics of the landscape analysed before.

In the landscape atlas of the region Nord – Pas-de-Calais the characterisation and identification are done but there's no attention for the qualification and the analysis of the forces. The analysis of the impact of other domains is very summary. In the detailed analysis of the metropolitan area the same elements are noted.

Protect, manage & planning- There are four instruments for the protection, management and planning of the French landscape (Folinais, 2006). A first instrument *Charte Paysagère* (Landscape charter) is an instrument from le *loi paysage* and is a tool for the development of a strategy for the landscape subscribed by public and private stakeholders. This charter can aim to protect, to manage, or to plan the landscape with the aim of maintaining its value. This voluntary instrument makes an analysis of the landscape, his values and the geographical, historical and cultural basis of the landscape. And sets landscape quality objectives which are translated into plans and actions with specific links to territorial and urban planning documents in order to realise this plan. This instrument is used on a local level.

A second instrument is the *Plans de paysage* (Landscape plans) these plans aims to define the value of the landscape and to incorporate it in other sectoral plans. The development of a landscape plan, which can focus on a urban or rural landscape, aims to improve the landscape with the collaboration of the different stakeholders. The agreement which is made between the different stakeholders makes it possible to develop a long term vision on the landscape. This plan is prepared at supramunicipal level. The difference between a landscape charter and a landscape plan is that *the charters reflect a contract, a commitment on the behalf of several signatories, the landscape plan is rather a plan of action, a roadmap on which the administration and the stakeholders will base their action in the territory in favour of the quality of the landscape* (Sala et al., 2014, p. 42)*.* These plan is, just as the landscape charter, integrated in other policies and sectorial plans.

A third instrument focusses on the development of green and blue networks in order to benefit biodiversity, ecosystem and landscape quality. This instrument takes the assumption that blue and green infrastructure are inseparable features. A coherent network of green/blue features, on the different scale levels, by which each level has his own task. The national level sets guidelines, the regions define the ecological coherence and draw up the primary scheme and on the local level these structures are integrated in urban planning (Ministère de l'Ecologic, du développment durable et de l'Energic, 2014).

The last instrument focusses on the development of rural territories under pressure of urban areas. This instrument is defined in the *Loi relative au développement de territoires ruraux* (law on the development of rural territories). The departments can use this instrument. After setting the territory and acquiring the land a programme of actions is set in order to protect the rural area and on how this actions can find their place into urban planning policies.

Participation & Knowledge and training

INSTRUMENTS - On the national level the *loi paysage* makes a firm commitment to public consultation. The landscape atlas guidebook describes the important of consulting the public. How it should be done isn't noted (Franchi, 2015). The participation process of the landscape charter of *Parc Naturel Régional* has been integrated in a collective management project. The governing body of the parks is structured into a mixed project group with the municipalities, civil society, governmental departments (Sala et al., 2014). In the landscape plans the public is consulated in each phase. The way this participation is done focuses on information and not on co-production

(Folinais, 2006). A public communication and awareness rising is also integrated in the guidebook for the development of the coastal landscapes (Conservatoire du littoral, 2013).

VOLUNTEERING – The *Société pour la protection des paysages et de l'esthétique de la France* is an organisation focussing on the protection of the heritage landscapes in France. This organisation funded with gifts and supported with volunteers takes actions by writing a magazine, giving lectures and the organisation of an annual congress (SPPEF, 2017).

Monitoring – In the different instruments monitoring isn't explicitly integrated. A method for photographing the landscape is described by the national level. This methodology makes it's possible to redo each photo and visual monitor the landscape (Ministère de l'Ecologic, du développment durable et de l'Energic, 2008).

Relation with other domains – The relationship between heritage and the landscape is noted in the establishment of the *Parcs nationaux* (National parks) and the *Parc Naturel Régional*. These parks régional need to develop a charter in order to be recognised by the national government. In this charter the guidelines for the conservation, management and improving of the park and the measures in order to realise are noted. An example of a *Parc Naturel Régional* situated in the région *Hauts-de-France* is park *natural régional des Caps et Marais d'Opale* (Fédération de Parcs naturels régionaux de France, 2017).

Besides the protection of the natural parks the conservation of the coast is integrated in the *conservatiore du littoral*. The relationship with the landscape of the coast and the protection of the coastline is described in a guidebook (Conservatoire du littoral, 2013). These document describes the analyse framework, the way intentions needs to be set, the planning of the landscape and the communication of the coastal landscape.

The relationship with urban planning is a strong relationship because the landscape instruments aim to be integrated in het urban planning policies in order to be integrated in a juridical instrument. We'll zoom in on the principles of the urban planning policies and their relationship with the landscape instruments (fig. 19) (Folinais, 2006). The interaction between the landscape instruments, on a supramunicipal level, gives input to the planning instruments.
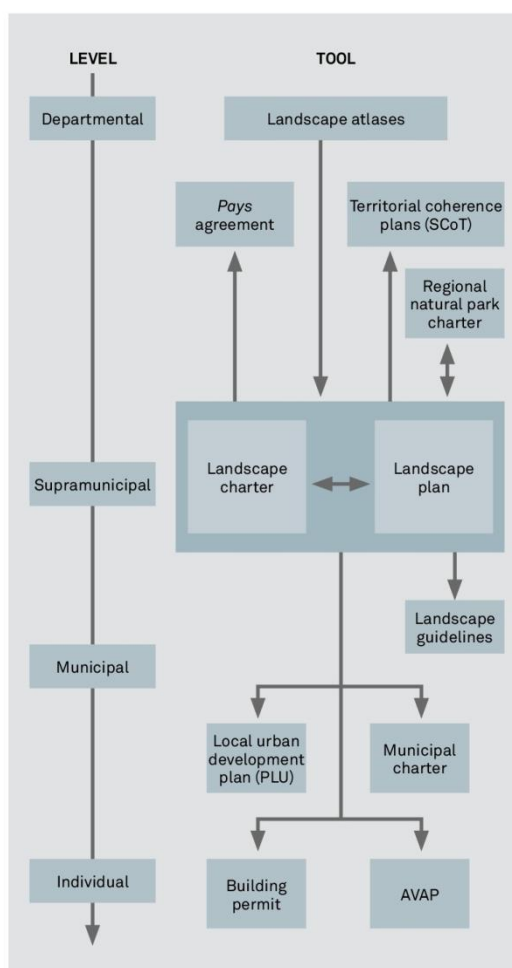
Fig. 16: Relationship between the planning, landscape and landscape plan tools, according to the scale of application for which they are defined (Folinais, 2006, p. 52; Sala et al., 2014, p. 35)

The *schéma de cohérence territoriale, scot,* (Territorial coherence plan) sets a framework for the sectoral plans on the level of the department. It creates coherence between different local plans and develops a long term vision on the territory. The landscape is one topic integrated in the vision. Important in the development of this framework are the wishes of the community.

The *Plan local d' urbanisme, PLU,*(Local urban development plan) is written on a local, municipal level. Within the borders set by the Scot the PLU develops planning policies and regulations for land use. The development and planning of the landscape and the green infrastructure are important aspect in this plan. In this plan two supporting plans are integrated. The *Project d' arréngement et de developpement durable ,PADD*, (Planning and sustainable development project) aims to write objectives and strategy for a sustainable development. Economic, social, environmental balance, landscape in the territory and urban development are integrated in this strategy. A second plan, *Orientation d' aménagement et de programmation OAP* (Planning an programming guidelines) focuses on realising detailed guidelines for development and redesign of development spots. In case of new developments the protection of the landscape is an important aspect.

Financial – Project based financing is integrated in the *1% Paysage et Développement* (1% Landscape and Development policy). This policy gives financial support for the integration of landscape in great infrastructure projects in order to improve the quality of the life of its inhabitants. The promoter of the highway infrastructure

should reserve 1% of the budget for the local stakeholders. These stakeholders contribute 50% of the funding of the landscape project en take the coordination of the landscape project.

II.III.II. REFLECTION

|	Pro	Contra
Identification	The identification is done on rural and urban areas, zooms in on the forces and values.	Only on level of the department.
Assessment	The landscape atlas zooms in on the participative development of objectives.	No objectives on national level besides objectives for green blue networks.
Planning	Landscape charter and landscape plan are two important instruments on supramunicipal level.	No zoom on the image of the landscape.
Participation	Participation is integrated in charter and in the process of urban planning.	Citizen participation isn't structural developed.
Monitor		Only a photographic monitoring is developed.
Relationship	A strong relationship with urban planning is developed in order to juridical anchor the landscape plans.	
Financial		The financial structure is project based.
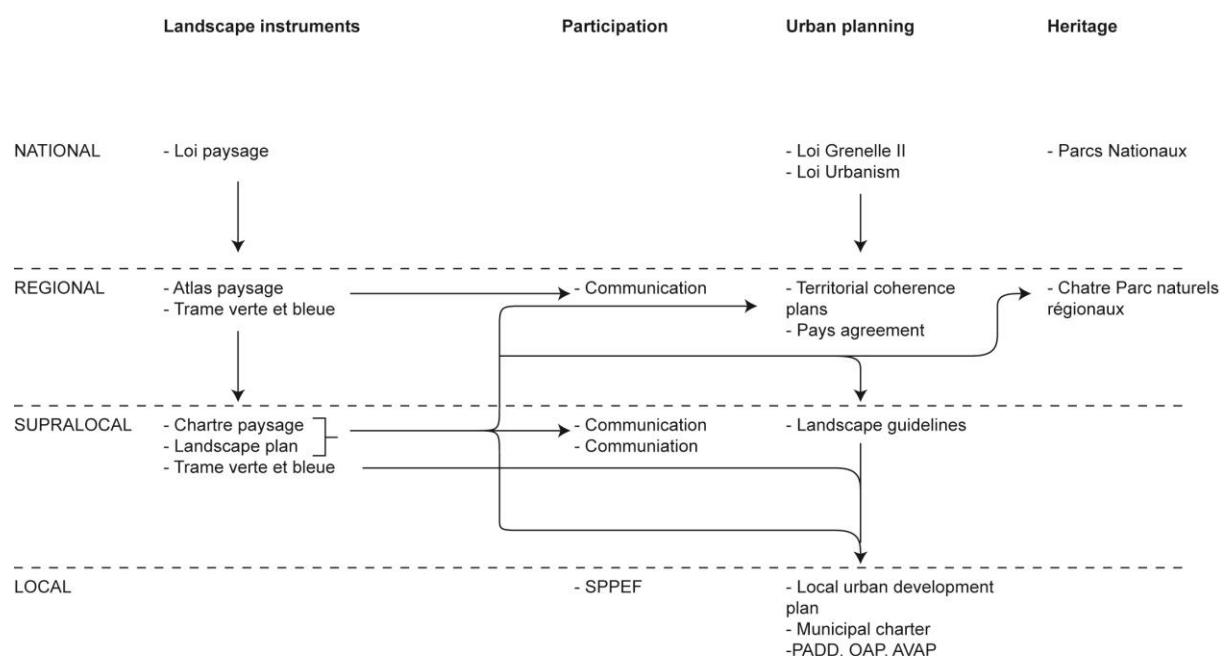
Fig. 17: France Landscape policies

II.IV. FLANDERS

II.IV.I. POLICY ANALYSIS

Implementation - The ELC was ratified in Flanders on the 14 of October 2004. Specific topics concerning the landscape are integrated in the *onroerend erfgoeddecreet (2013)*, law considering heritage. In contrast with the definition of the landscape, which is identical with the definition in the ELC, the rules in this law only apply for heritage landscapes. Rules concerning other landscape are integrated in urban planning policies (VCRO) and policies about nature (Natuurdecreet).

Identification – The identification of the landscape and the different landscape types is globally done in Flanders in the map of the *traditionele landschappen* (traditional landscapes) (Antrop, Van Eetvelde, Janssens, Martens, & Van Damme, 2002). This map describes the landscapes types by analysing visual, cultural and historical dimensions. This map was the start of the layout of the *landschapsatlas van Vlaanderen* (landscape atlas, fig. 21) (Antrop, 2010).

Fig. 18: Traditionele landschappen (Antrop et al., 2002, p. 1)

The *landschapsatlas* investigates the different relicts in the landscape by using a holistic method with three criteria: visibility, integrity and consistency. The relicts where defined by a spatial typology with four categories. From important areas with a high value, areas with an intermediate value, line or point elements. After a scan of the entire territory different aspects are marked but the map doesn't given an identification of the entire territory. It only marks important objects or spaces.

A second analysis, the *Landschapskenmerkenkaart* (Landscape character map) made is an inventarisation of the landscape characteristics of supra – local value. This characteristics are of physical, biotic or human nature. An example of this map can be found on figure 22. An important difference between the *Landschapsatals* and the *Landschapskenmerkenkaart* is the juridical position of the maps. The *Landschapsatlas* is an informative map. One of the types of elements analysed in the *landschapsatlas*, *ankerplaatsen* (landscape ensembles with a high heritage value) are juridical protected with a specific procedure. The consequences of a set *ankerplaats* are only valid for public authorities. This in contrast with the protected cultural historic landscapes which have an impact on citizens and authorities.
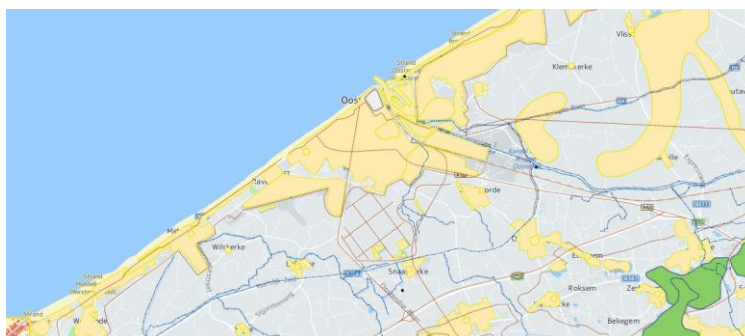
Fig. 19: *Landschapskenmerkenkaart* (Agentschap voor Geografische Informatie Verwerking, 2002)

Recently some additional analyses are made. For example Veerle van Eetvelde (Van Eetvelde, 2007) did a cluster analysis on the existing data, height model, Corine Land Cover, Soul map an Satellite map. She defined 67 landscape types which slightly differ from the *traditionele landschappen*.
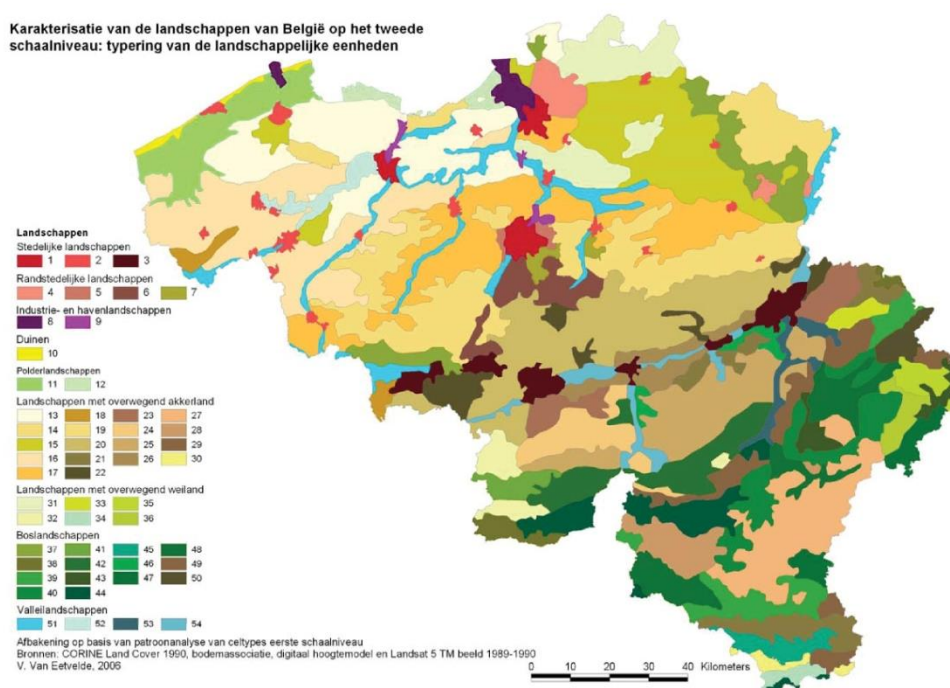

Fig. 20: Landscape types (Van Eetvelde, 2007, p. 288)

Assessment (forces and values) – In the heritage law some main values regarding the landscape are noted such as an esthetical, nature, historical, socio-cultural value and specific for *ankerplaatsen* the spatial value. When dealing with a landscape from a heritage perspective these values are used. This was the case in order to develop the *landschapsatlas* (Antrop, 2010, p. 272).

Landscape quality objectives – Within the map of the *traditionele landschappen* some objectives are set for each landscape type. They describe some potential evolution of this type of landscape. Important to note is the none juridical position of this map but it gives an identification.

A landscape management plan can be written for the heritage landscapes. In this plan, management objectives are identified after setting a long term vision for the heritage landscape. The main objectives start from the cycle of use, reuse ore redirect and try to maintain, strengthen or redevelop the values of the landscape. The secondary

objectives which are optional focus on the valorisation, the redirection or to make it conform with other rules (Agentschap Onroerende Erfgoed, 2015).

Protect, manage & planning – On the national level the focus is set on the protection of high value heritage landscape. Some Cultural historical landscapes are protected and some *ankerplaatsen* are protected. In order to integrate this *ankerplaatsen* they can be integrated in the spatial planning policy when they are integrated in a zoning plan (RUP) (Agentschap Onroerende Erfgoed, 2013).

On a local level for specific sites a management plan with the described objectives can be developed. The process to develop a management plan starts with an inventarisation, a localisation and description of the heritage values. This aspects are translated in a vision on the management which are translated in objectives and measures. This measures have a timing, detailed description of how this measure shall be implemented and the way they will be evaluated (Agentschap Onroerende Erfgoed, 2015).

The Flemish Land Agency (VLM) is also involved in the planning and management of the landscape. The goal of this agency is *to realise a policy to maintain, to protect, to restore and to develop the function and quality of space* focussing on the rural space. They do this on a project based way by initiating project such as the compensation project of the Zwin area or by entangle farmers with management plans in the planning of the rural area. The instruments they use to do this are part of the land arrangement policies. It's instruments like arrangement notes, redistribution of land programmes and management agreements (Ministerie van de Vlaamse Gemeenschap, 2014; VLM, 2017).

Participation

INSTRUMENTS: In the specific instruments participation is institutionalised. In the process of the protection of a landscape the public is consulted, the other governmental domains and a royal commission for monuments and landscapes is giving advice. This commission is also involved in the protection of the *ankerplaatsen*.

Participation in the process of the development of a management plan is structuralized with a management comity in which the different stakeholders, owners and floorwalkers reside. This comity is charged with the writing of the plan but it involves citizens by informing.

VOLUNTEERING: The involvement of citizens in the landscape is done by sectoral organisations. From the landscape sector the *regionale landschappen,* regional organisations involved in the development of a specific landscape type by managing hedges, pools, etc. are important. On the other hand education about the landscape and recreation by routing in the landscape are goals of this volunteering organisation (Regionaal Landschap Ijzer & Polder vzw, 2017; Regionale Landschappen, 2017).

From a nature perspective *natuurpunt vzw* is floorwalker of landscapes. They are owner or set a cooperation pact with owners or local authorities in order to develop the nature value of specific areas. Volunteers can help in maintaining the areas on the one hand, on the other hand they are giving some education and doing research about the evolution of nature (Natuurpunt Middenkust vzw, 2017; Natuurpunt vzw, 2017).

A last organisation Herita, is an organisations to promote and strengthen the involvement of people with heritage landscapes. They strive for the openness of monuments to strengthen the experiencing of the heritages (Herita vzw & Agentschap Onroerende Erfgoed, 2017).

Monitor – The monitoring of the landscape is done by a photographic comparison method which compared photos by Massart (1980) and rephotographed in 2004.

In the management plans monitoring is done by evaluating the measures. It seems important to make a photographic report of the changes of the heritage landscape in order to evaluate the measures (Agentschap Onroerende Erfgoed, 2015).

Relation with other domains – The heritage policies concerning the landscape are integrated in the policies noted above because these are the dominant policies used in Flanders. But landscape can also be integrated in urban planning policies. In the urban planning two instruments are involved in the planning of the landscape, strategic plans and zoning plans both can be made on the national, regional or local level. In a strategic plan the development perspectives concerning the landscape are noted for Ostend for example this plan aims to strengthen the quality of the rural landscape, to invest in a ecological, landscape and agricultural water management and to invest in sufficient green areas in the urban context. This main goals are detailed in measures. The revitalisation of existing green open spaces and parks, the development of new parks, making green connections with some specific plots are examples of these measures (WVI & Stad Oostende, 2006). To implement this strategic plan zoning plans (RUP) can be made in order to get a juridical instrument. This zoning plans are the context in which building permissions can be granted.

Fig. 21: Strategic development plan Ostend (WVI & Stad Oostende, 2006, p. 202)

On the national level in the *ruimtelijk structuurplan Vlaanderen* (Ministerie van de Vlaamse Gemeenschap, 2004) four main goals are set for the evolution of the territory from which three are of value for the development of the landscape. The first goal, *gedeconcentreerde bundeling,* states that new developments should be integrated in the existing structures which are spread over the territory. A second principle sets way for the use of infrastructure as a basic for activities. But the most important and most related to the landscape principle suggests to use physical systems as a way to structure space. Two specific policies are noted regarding the perspectives on the development of the landscape as part of the chapter about the rural area. This two are applicable for the different governmental levels.

The first policy suggests to define the landscape on the basis of his characters such a biotic, abiotic, cultural, etc. The second policy focuses on the use of this characterisation when new spatial transformations are implemented. The landscape should be part of the consideration when planning. Diversity of the landscape and recognisability are key in this approach.

The regional level (province of West-Vlaanderen) notes in his strategic plan in order to detail the policies noted by the national government to work on the recognisability, to integrate the cultural historic landscapes and to integrate new developments in the landscape. These three goals are translated in concrete policies for the different landscape types such as intact landscapes, Ankerplaatsen, new landscapes, shrunk landscapes, urban landscapes and landscape components (Provincie West-Vlaanderen, 2002).

The nature law is involved in the landscape by protecting different components of the landscape such as forests and other small landscape elements, trees, hedges, etc. (Ministerie van de Vlaamse Gemeenschap, 2016).

Financial – Some financial premium are set for heritage landscape in order to maintain the heritage or premium for the development of a management plan.

Other financial instruments are integrated in other sectoral financial structures such as premium for nature development, for maintaining small landscape elements, for touristic purpose, etc.

II.IV.II. THEMATIC REFLECTION

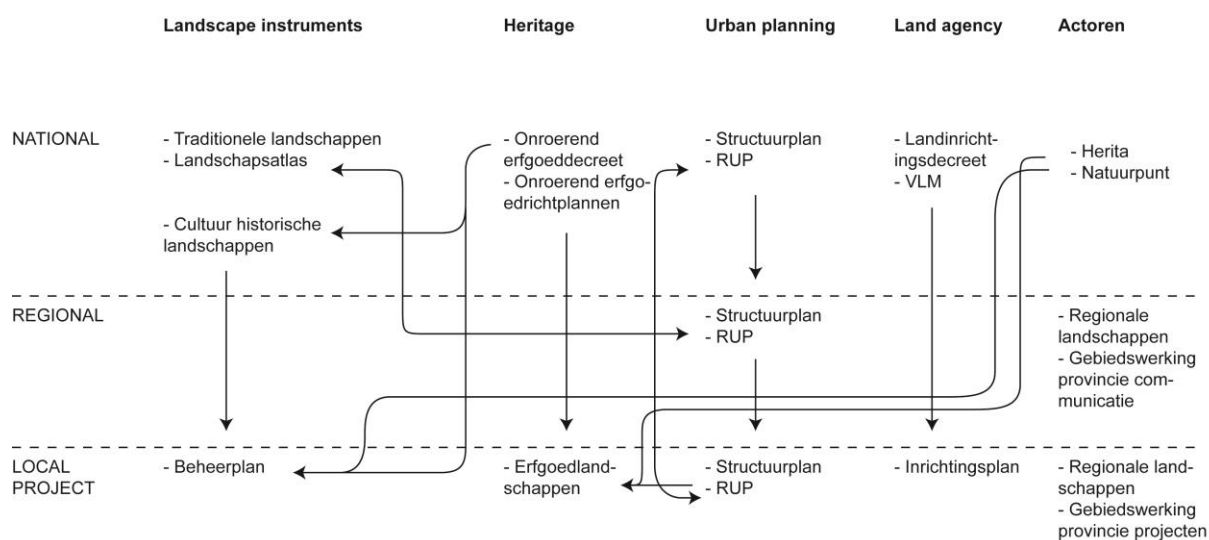|	Pro	Contra
Identification	The mapping on the national level is coherent.	Identification on local level is project based which reduced compability. Forces and values aren't identified.
Assessment		The focus of the different policies is on heritage landscapes.
Planning		Beside a landscape management plan there are no specific instruments.
Participation	The civil organisations and their volunteers give a platform for coproduction.	The public involvement in the policies is limited.
Monitor		Only a photographic monitoring is done.
Relationship	The juridical landscape planning is integrated in the urban planning policies.	
Financial		Not well developed.

	Landscape instruments	Heritage	Urban planning	Land agency	Actoren
NATIONAL	- Traditionele landschappen - Landschapsatlas - Cultuur historische landschappen	- Onroerend erfgoeddecreet - Onroerend erfgoedrichtplannen	- Structuurplan - RUP	- Landinrichtingsdecreet - VLM	- Herita - Natuurpunt
REGIONAL			- Structuurplan - RUP		- Regionale landschappen - Gebiedswerking provincie communicatie
LOCAL PROJECT	- Beheerplan	- Erfgoedlandschappen	- Structuurplan - RUP	- Inrichtingsplan	- Regionale landschappen - Gebiedswerking provincie projecten

Fig. 22: Flanders Landscape policies

II.V. CONCLUSION

What has this analysis of the different landscape policies in the different partner countries learned us in order to develop a strategy for the implementation of LLD in WSUD?

A first important notice is the fact that *landscape* can't be narrowed down to the rural area. As the definition of the European Landscape Convention states landscape is much broader.

⇒ The way we develop a strategy should be useable in both rural, urban and fringe settings.

The countries show a different approach in the development of the landscape policies. A first approach develops policies of the landscape starting from a geographical viewing point. This approach sets for each level a plan for the planning of the landscape. On the other hand the landscape can be approach from a sectorial point of view. For each sector plans can be developed in which the landscape is a topic.

⇒ In order to set a strategy the interrelation between a geographical and sectorial approach needs to be developed.

Different mapping methods are used to make a detailed mapping of the landscape in order to set a broad identification of the landscape. The differences between the countries in manner, scale, systematic and topic diversification are an important element. Combining gives us a broad insight in the way the landscape works. The analysis of forces influencing the landscape is a submerged subject.

⇒ For strategic use the mapping needs to set a profound basis for the project. In this mind-set a multiscale, multilayer approach on a systematic way is important. This with attention for the mapping of the dynamics, the forces and the values, on different social scales.

Not only the structures needs to be analysed, the image of the landscape, on a local scale, deserves attention. The BKP in the Netherlands is an examples of this approach.

⇒ Micro inventarisation from the viewpoint of people is an important element to be integrated in the strategy.

Making an assessments and writing Quality Landscape Objectives is an important step which isn't always well implemented. The differentiation between inventarisation and assessment, between an objective description and an evaluation, is important and should be strictly separated as in the UK is done.

⇒ The setting of objectives on a profound manner is important in order to develop a project with a sharp analysis, in tune with the context and with clear reasoning towards the conclusions.

The analysis of the social structure, social values concerning the landscape is, as stated by the ELC, important. The value monitoring done by the Netherlands can be an example of monitoring such social values.

⇒ The strategy should implement observation techniques such as interviews to capture the social values and monitor the change after realisation of the project.

The landscape policies hold a communication strategy in order to involve citizens. Besides this governmental participation, volunteering is in some countries an important aspect for co-creation of the landscape.

⇒ The interaction between both elements, a broad stakeholder inventarisation and entanglement could strengthen the involvement.

A person responsible for the landscape project can make it easier for different stakeholders to get involved because of the clear contact point.

⇒ A project coordinator is important as contact point.

As last element we saw that within the partner countries the relationship between urban planning and landscape policies is important because the juridical consequences are integrated in the urban planning procedures and planning.

⇒ A design strategy for the integration of LLD in water management should focus on the design features. The interaction with urban planning is a next step.

III. EXAMPLES OF LANDSCAPE LED DESIGN/WATER MANAGEMENT

These policies gave some input for the strategy but in order to develop a design strategy looking into some cases can support the development of the design strategy.

III.I. CASES

III.I.I. LA RIVIÈRE DE L'AIRE-GENÈVE

Context		Project	
City	Genève	Realisation	2014
Area	158.6km²	Area	Region
Inhabitants	191 557	Designer	ADR
Density	1169.8 inh/km²	Price	/

Description – The realisation of this design project was a short term action integrated in a study for the estuary of the river and the entire region. The main aim was to solve the flooding problems but this in combination with nature development, agriculture and the possibility of accessibility of the water by people. The design started from a restauration approach by which the historical structure the dykes, marches, hedges and bushes where reintroduced in combination with recreational features. For example the existing canal is integrated and combined with a redevelopment of the old river structure which makes more space available for the river. The entire area alongside the Chanel with a width of 80 meter is transformed from agriculture to nature area (Cohen, 2014).
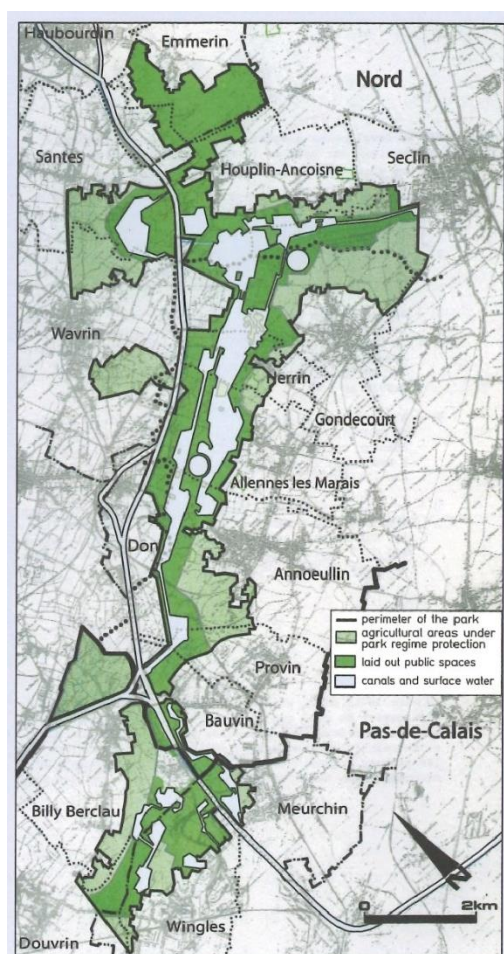
Context		Project	
City	Lille	Realisation	2015
Area	34.83km²	Area	Region
Inhabitants	227533	Designer	JNC international
Density	6532.7 inh/km²	Price	24 million

Description – The parc de la deûle aims to create a green network between Lille and Lens. In this green infrastructure with a hybrid condition between town and countryside the different urban and rural needs should be integrated. The focus on recreation, landscape restoration, agriculture, ecology and restoration of the polluted water supply are the aspects this design wants to integrate. The reading of the landscape forms the basis for this design. For example the different water structures, canals, wet meadows, swamplands, meanders and basins are used as design features. These aspects resulted in a design strategy which is implemented in a first phase on the plots owned by the different municipalities. In a second phase the plots which came available are transformed in cooperation with the different stakeholders (Vanempten, 2010).

III.I.III. ARKADIEN-WINNENDEN

Context		Project	
City	Winnenden	Realisation	2011
Area	28.05km²	Area	3.4ha
Inhabitants	27361	Designer	Ramboll studio Dreiseitl
Density	975 inh/km²	Price	/

Description – The regeneration of an industrial area set the start of the development of a sustainable neighbourhood. This suburb wanted to be a different suburb, people friendly, a productive suburb but above all a water resilient suburb. The water sensitive urban design was a basic approach giving input to the design. On the other hand the site itself was an inspiration for the design. An old creek for example was reintroduced as landscape feature to support the water sensitive design. Besides this a great lake, planting, permeable materials, etc. where introduced. This green structure formed the basis in which recreational paths and play areas where introduced (Landezine, 2013).

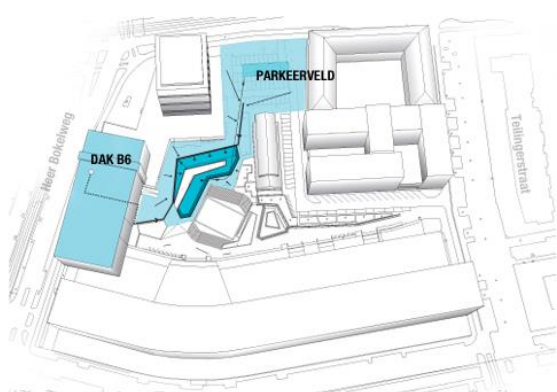| Context		Project	
City	Freiburg im Breisgau	Realisation	Until now
Area	153.07km&	Area	District
Inhabitants	220 286	Designer	City of freiburg
Density	1439 inh/km²	Price	/

Description – The redevelopment of an old military site wanted to create a sustainable neighbourhood. Sustainable in an ecological, social and economic sense. The initiative of this project was taken by the city but they delegated the coordination of the project to a group of citizens. This too strongly invest in involvement of the citizens. This social approach was translated in a social design for the public space and in a *baugruppe* approach as development tool. The ecological theme can be found in a car free neighbourhood, the use of renewable energy and a sustainable water strategy. For example the rainwater is as much as possible infiltrated and buffered in a water structure integrated in the public domain. The sanitary water is in one pilot project ferment an aerobically together with organic household waste to generate biogas used for cocking. The remaining waste water is cleaned in biofilm and returned to the water cycle. The landscape led design approach focuses on the one hand on the participatory approach and on the revaluation of the historic structures and rivers (Delleske, 2013).

Context		Project	
City	Rotterdam	Realisation	2013
Area	319,53km²	Area	Square
Inhabitants	633471	Designer	De Urbanisten
Density	3060 inh/km²	Price	/

Description – The aim to deal with storm water problematic in an urban area is translated in a water buffer in this square. The multifunctional design is combining the buffer area with a playground, sitting areas, etc. This combination makes that the infrastructural project is imbedded in the urban landscape context. To create this new square the initial question to redevelop the square came from students in de schools surrounding the square. Together with the city, who wanted to realize a watersquare, the architects realised a co-design process (De Urbanisten, 2017; Rotterdam, 2017).

Context		Project	
City	London	Realisation	2014
Area	1577.3 km²	Area	1 street
Inhabitants	8.6 million	Designer	Greysmith Associates
Density	5354 inh/km²	Price	£180 000

Description - This road with a dead end was primary used as parking space, fly tipping and anti-social behaviour. The aim of developing a cycle route and a new outside space for community events was the start for a project funded by the Mayor of London's Pocket Park Programme in 2013.

The aim of the scheme was related to water management because of the integration of the SUDS/WUSD principles in the entire site. Six principles where integrated: attenuating planters, permeable paving, small scale green roofs, rain gardens, engineered tree pits and a swale. The connectivity between the different water management systems makes it a robust system. For example when a green roof is saturated the water flows to the three connected rain gardens where water can infiltrate.

Besides this water management features, cycle lanes, a space for community, nectar rich plants, use of recycled materials and edible herbs and trees where part of the design. The community was an important stakeholder in the project. A community planting day was for example a final coproduction initiative. The input of the existing context and community supported relates to LLD (Susdrain, 2017; WLA, 2017)

As syntheses five lessons can be learned from the different examples.

- The participation process should be integrated in the entire design process and focus not only on information and communication but also on passing along responsibilities to citizen organisations.
- The landscape as it is and his history can be the basis for the redevelopment. The different structures, existing or existed, and the basic elements of the landscape are the building blocks of the design.
- The process of redeveloping is depending on ownership. The plots of the government can be developed on short term. Other plots can be redeveloped plot by plot. To do this a strong, long term vision is needed.
- The water structure should be multifunctional combining ecological, recreational and esthetical qualities.
- Not only rain water but also grey water should be integrated in the design. Two different strategies can be used to give an ecological answer to these systems.

IV. JOINT STRATEGY

As the research question noted the aim of this report is to set a strategy for the integration of LLD in WSUD in order to given an answer to the challenges of climate change. This chapter will zoom in on this joint strategy. To explain this strategy the pilot *Gardens of Stene in Ostend* will be used as example. The scheme of the strategy and of the example can be found on page 51, 52

The strategy is based on a vertical and a horizontal structure. The vertical structure divides the design strategy from the participation strategy. This participation strategy zooms in on the relationship of the design with experts, civil society and citizens along the entire design process. The horizontal structure divides the strategy in the different design phases. These design phases relate to the different phases in the European Landscape Convention but one phase is added, the start phase. This horizontal structure will guide us through the strategy.

Start – The first step in order to design a project is to set the goals of the project. In the context of the SCAPE project the three major aspects of this goal are climate change resilience, water management and landscape led design. These broad goals need to be translated in the specific goals for the project which come together in the project definition.

In the first phase the identification of the stakeholders is an important aspect. Different methods such as influence/interest grid, power/interest grid, stakeholder engagement model, etc. can be used. They are contacted to inform them about the start of the project. A project manager can do this and be the first in line to be contacted by the different stakeholders.

> ⇒ In the pilot *Gardens of Stene* the global aim was to design a public agricultural park where there was room for ecology by giving more space to the water system and to redesign this system to enlarge the natural possibilities.
>
> *The identification of the different stakeholders is done in this phase.*

Identification – The second step when a project is developed is the identification phase. As noted in the European Landscape Convention, landscape takes a holistic approach to the spatial context. To identify, objectively, a specific spot in a holistic sense, it's important to zoom in on the different possible approaches such as biotic, abiotic, spatial, heritage, functional, economic, socio/cultural and time. By time we mean the evolutions, dynamics embedded in the landscape. The way and depth each theme is analysed depends on the specific context. As in the SCAPE project embedded the different pilots are divided in urban, fringe and rural pilots. It seems to us that for urban pilots the functionalities are more important than the biotic aspects and vice versa for the rural pilots. But it's important to stress that the specific context is the guideline for the analysis. One element can't be neglected when making an identification of a specific case, the multiscale approach is indispensable.

Participation in the identification phase can be integrated in the mapping methods. For example the use of qualitative methods, interviews, focus groups, walks, etc. are ways to gather information and involve different stakeholders. Specific information such as values regarding the landscape can be identified by using these specific techniques.

> ⇒ In the pilot *Gardens of Stene,* a fringe plot, the multiscale approach has been used and the divers themes where analysed. We note that for example the biotic aspects are in depth analysed because of the importance on site and are integrated in the goals of the project.
>
> *For the Gardens of Stene bilateral interviews and walks have been organised.*

Assessment – When the identification of the different topics is finalised an analyse of the different topics can be done. A SWOT analyse is a possible method to give a subjective evaluation to the different themes. After this analysis topic by topic they can be clustered in three themes, ecosystem services, spatial structure, socio-economic structure.

When evaluating the identifications a climate test with a lot of experts can be interesting to discuss the interrelation between the different topics so the combination in three structures is done on a transparent way. Because of the technical aspects in this phase the participation of civil society and citizens isn't necessary.

⇒ In the pilot *Gardens of Stene* this clustering isn't done.

In this phase no participation is integrated in the pilot.

Objectives – When the weaknesses and strengths are clearly identified it's important to set the objectives for the project. A dialog between the project definition and the outcome of the analysis should result in the objectives for the project. In the strategy a hexagon can be used as visual element to identify the existing position of the different themes and the quality we want to achieve.

The involvement of the different stakeholders in the objectives of the project is important. So an in depth reflection with the different stakeholders should be done.

⇒ The *Gardens of Stene* try to strengthen the different structures with a focus on ecosystem services and want to combine agriculture with a public park. For each of this topics detailed ambitions are noted in the framework plan, developed for the project.

The communication about the objectives is not done in this phase but later on when a first sketch plan was ready. This reduced the abstract level of the objectives but in this way they arent' fundamentally discussed.

Design – This brings us to the main part of the strategy, the design part itself. The design strategy is composed of five different strategies. One from every analyse structure and two combined strategy for the relation between ecosystem and spatial, and between spatial and socio-economic. There's no intermediate strategy for ecosystem and socio-economic because of the mediator aspect of the spatial structure.

The first strategy focuses on the ecosystem services, and water management in particular, by setting a strategy from retention of water, infiltration, storage and drainage. The second strategy, between ecosystem and spatial, defines this relation by the retreat of spatial structures, adapt them or fortify the structures. The third and spatial strategy zooms in on the shape of the design. This gradient notes from restore historic structures to design completely new shapes. The way the design is realised can be done on different ways. From a total approach in which the masterplan and realisation is done by one actor and, in contrast, the plug in strategy[4].The last strategy is related to the participation process and defines the involvement of the different actors and the related economic dynamics possible to embed in the project (Lang, 2005; SASAKI, 2014; Timmermans, 2017; Wong, 2006; Wong & Brown, 2009).

In each strategy the design should identify the correct element of the strategy which stroke with the objectives to function as the basic design manner. When these different strategies are defined they need to be confronted with each other, revaluated, detailed in order to come on an iterative way to a definitive design. For example when choosing retention, adaptive, restore, piece by piece and a coproduction approach. The design will use green

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[4] In the glossary the exact definition of every element can be found.

infrastructure adapting the existing landscape structures with historical structure in order to realise buffer volumes by the citizens one by one.

The participation of the different stakeholders in the design phase is strongly differentiated by stakeholder group. After setting a first step in the design process by developing the different strategy the experts are consulted, by a climate test workshop, to seek to integrate the different strategies. When the design is further detailed they are contacted bilaterally if necessary. When the draft design is ready they are contacted to talk about this plan. The civil society and the citizens are involved by attending different workshops. It seems better not to gather them in one workshop because of the knowledge differences.

> ⇒ In the example pilot, *Gardens of Stene*, the strategy used focusses on the retention and infiltration of water by adapting the spatial structure. This spatial structure will be a reinterpretation of the historic structures. The development will be piece by piece within a co-design/communication strategy.
>
> *In the design process of the Gardens of Stene for the different actor types different participation paths are deployed. The scenarios are in a workshop discussed with the different actors, with the experts a study trip and a climate test where done and the civil society and the citizens where informed on multiple occasions.*

Realisation – After the design process the realisation is started. Before starting the realisation a reflection with the project definition is necessary in order to be sure the requirements are met.

In the realisation the participation can be shaped in two ways. First when realising the different actors can visit the project. On the other hand some actors can help realising the project. Volunteers for example can help planting a forest.

Monitor – The goals set by the project definition should be monitored in order to be sure, on the long term, that they are realised and that if necessary the design can be adapted.

In the participation strategy it's important to keep communication about the evaluation of the design and the reflection on the aims set for the project. Therefore informing the experts, civil society and citizens should be continued.

DESIGN STRATEGY

PARTICIPATION STRATEGY
Landscape coordinator
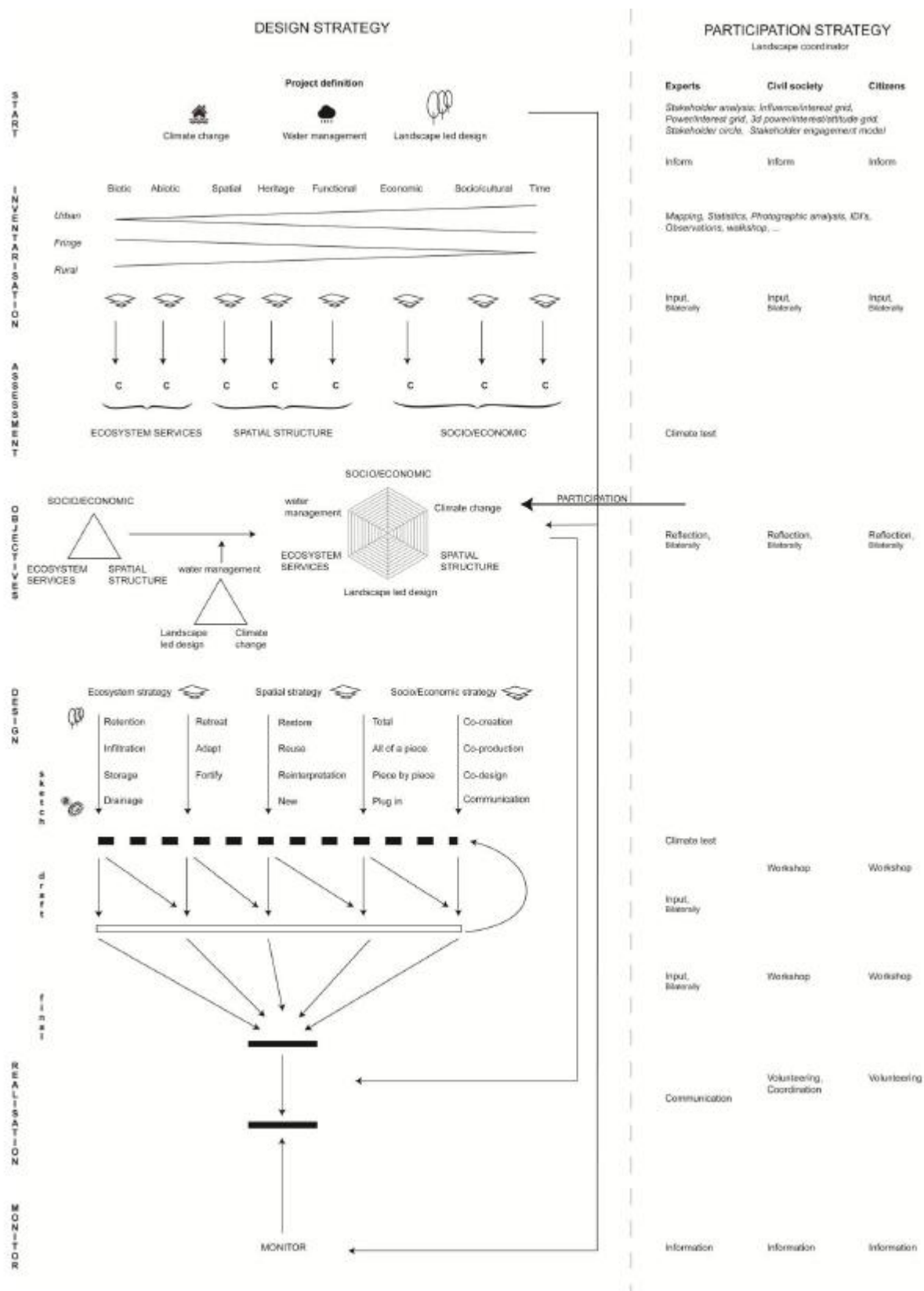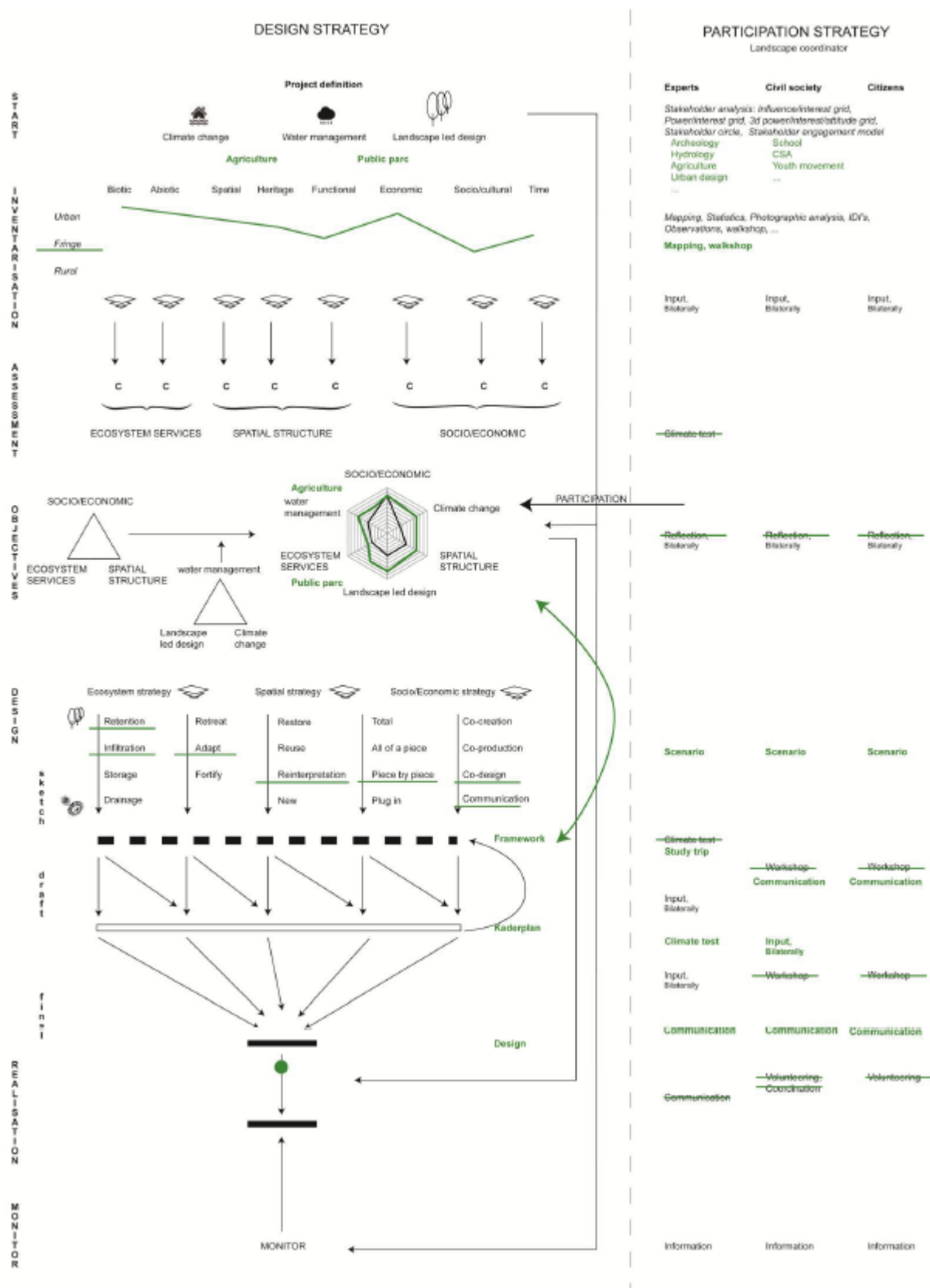
V. GLOSSARY

Regional economic planning approach: In this case, spatial planning has a very broad meaning relating to the pursuit of wide social and economic objectives, especially in relation to disparities in wealth, employment and social conditions between different regions of the country's territory. Where this approach to planning is dominant, central government inevitably plays an important role in managing development pressures across the country, and in undertaking public sector investment (European commission, 1997, pp. 36–37).

Comprehensive integrated approach: In this case, spatial planning is conducted through a very systematic and formal hierarchy of plans from national to local level, which coordinate public sector activity across different sectors but focus more specifically on spatial co-ordination than economic development (European commission, 1997, pp. 36–37).

Land use planning: Where planning is more closely associated with the narrower task of controlling the change of use of land at the strategic and local levels. (European commission, 1997, pp. 36–37)

Total urban design: where the urban designer is part of the development team that carries a scheme through from inception to completion (Lang, 2005, pp. 28–29).

All-of-a-piece urban design: where the urban design team devises a master plan and sets the parameters within which a number of developers work on components of the overall project (Lang, 2005, pp. 28–29).

Piece-by-piece urban design: in which general policies and procedures are applied to a precinct of a city in order to steer development in specific directions (Lang, 2005, pp. 28–29).

Plug-in urban design: where the design goal is to create the infrastructure so that subsequent developments can 'plug in' to it or, alternatively, a new element of infrastructure is plugged into the existing urban fabric to enhance a location's amenity level as a catalyst for development (Lang, 2005, pp. 28–29).

Agentschap Onroerende Erfgoed. (2013). Landschappen. Een kennismaking. Agentschap Onroerend Erfgoed.

Agentschap Onroerende Erfgoed. (2015). Richtlijn voor de opmaak van een beheersplan. Onroerend erfgoed beheersplannen.

Agentschap voor Geografische Informatie Verwerking. (2002). Landschapskenmerkenkaart. Retrieved April 14, 2017, from http://www.geopunt.be/catalogus/datasetfolder/6f3b64e2-b8b1-11e3-b6ba-425861b86ab6

Antrop, M. (2010). *Perspectieven op het landschap. Achtergronden om landschappen te lezen en te begrijpen.* Gent: Academia Press.

Antrop, M., Van Eetvelde, V., Janssens, J., Martens, I., & Van Damme, S. (2002). Traditionele landschappen v6.1.

Brighton & Hove City Council. (2008). Community Engagement Framework.

Brighton & Hove City Council. (2015). Brighton & Hove Statement of Community Involvement. Planning.

Brighton & Hove City Council. (2017). Volunteering Opportunities with Brighton & Hove City Council's Rangers and Cityparks.

Brighton & Hove City Council, Sussex Wildlife Trust, & Susses Environment Partnership. (2009). A Green Network for Brighton & Hove Final Report.

Brighton & Hove Connected, & Brighton & Hove City Council. (2017). Brighton & Hove - The connected city. An introduction to the sustainable Community Strategy for Brighton & Hove.

CLO. (2017). Landschap | Compendium voor de Leefomgeving. Retrieved March 16, 2017, from http://www.clo.nl/onderwerpen/landschap

Cohen, L. (2014). L'AIRE LA RIVIÈRE QUI TRAVAILLE À DISTANCE POUR LA VILLE. Nature et paysage.

Conservatoire du littoral. (2013). Les paysages du conservatoire du littoral. Guide méthodologique.

Council of Europe. (2000). European landscape convention. In *Report and Convention*.

Council of Europe. (2008). Recommondations CM/Rec(2008)3 of the Committee of Ministers to memeber states on the guidelines for the implementation of the European Landscape Convention.

Countryside Agency. (2003). The state of the countryside 2020.

Countryside Agency. (2004). Countryside Quality Counts. Tracking change in the English countryside.

Countryside Survey. (2016, February 11). Field Survey. Retrieved February 24, 2017, from http://www.countrysidesurvey.org.uk/content/field-survey

Coutts, A. M., Tapper, N. J., Beringer, J., Loughnan, M., & Demuzere, M. (2013). Watering our cities: the capacity for water sensitive urban design to support urban cooling and improve human thermal comfort in the Australian context. *Progress in Physical Geography*, *37*(1), 2–28.

Cramer, J. M. Besluit ruimtelijke ordening (2008).

Daanen, H. A., Jonkhoff, W., Bosch, P., & ten Broeke, H. (2013). The effect of global warming and urban heat islands on mortality, morbidity and productivity in The Netherlands. *Editors: James D Cotter, Samuel JE Lucas and Toby Mündel*, 16.

DC groep bv, & Sakko, D. (2006). Groenbeleidsplan gemeente Middelburg. Gemeente Middelburg.

de Boer, T., & de Groot, M. (2010). Belevingswaardenmonitor Nota Ruimte 2009. Eerste herhalingsmeting landschap en groen in en om de stad. Alterra Wageningen UR.

De Montis, A. (2014). Impacts of the European Landscape Convention on national planning systems: A comparative investigation of six case studies. *Landscape and Urban Planning*, *124*, 53–65.

De Urbanisten. (2017). Water Square Benthemplein. Retrieved June 16, 2017, from http://www.urbanisten.nl/wp/?portfolio=waterplein-benthemplein

Defra, & English Heritage. (2009). European Landscape Convention - A Framework for Implemantation in England. Retrieved from http://webarchive.nationalarchives.gov.uk/20101111121753/http://www.landscapecharacter.org.uk/elc/framework

Delleske, A. (2013). An introduction to Vauban district. Retrieved June 19, 2017, from http://www.vauban.de/en/topics/history/276-an-introduction-to-vauban-district

Direction régionale de l'environnement Nord - Pas-de-Calais. (2008). Atlas des paysages de la région Nord - Pas-de-Calais. paysages de la Métropole. Direction régionale de l'environnement Nord - Pas-de-Calais.

Emerand, K., Durieux, L., Raevel, P., & Ingéniérie, G. (2005). Atlas des paysages de la région Nord - Pas-de Calais. DIREN-DRIRE Nord - Pas-de-Calais.

ERDF. (2017). Programme area | 2 Mers Seas Zeeën. Retrieved June 14, 2017, from http://www.interreg2seas.eu/en/content/programme-area

European commission. (1997). The EU compendium of spatial planning systems and policies.

Farinós Dasi, J. (2007). ESPON project 2.3.2 Governance of Territorial and Urban policies from EU to Local Level.

Fédération de Parcs naturels régionaux de France. (2017). Parcs naturels régionaux de France. Retrieved June 15, 2017, from http://www.parcs-naturels-regionaux.fr/

Folinais, C. (2006). Plans de paysage: eléments de bilan. Ministère de l'Écologie, du Développement durable et de l' Énergie.

Franchi, A. (2015). Les Atlas de paysages. Méthode pour l'identification, la caractérisation et la qualification des paysages. Ministère de l'Écologie, du Développement durable et de l' Énergie.

Gale, A., & Natural England. (2009). Green Infrastructure Guidance. Natural England.

Gehrels, H., Meulen, S., Schasfoort, F., Bosch, P., Broslma, R., Dinther, D. van, … Jong, M. de. (2016). Designing green and blue infrastructure to support healthy urban living.

Gemeente Middelburg. (2016). Nota ruimtelijke kwaliteit. Gemeente Middelburg.

Heijdeman, B. J. (2005). Landschapsmanifest.

Herita vzw, & Agentschap Onroerende Erfgoed. (2017). Herita - Vlaamse erfgoedorganisatie. Retrieved April 14, 2017, from http://herita.be/

Het Zeeuwse Landschap. (2017). Het Zeeuwse Landschap | Zeeland blijft niet vanzelf mooi... Retrieved March 17, 2017, from https://www.hetzeeuwselandschap.nl/

Landezine. (2013). Arkadien Winnenden by Ramboll Studio Dreiseitl « Landscape Architecture Works | Landezine. Retrieved June 19, 2017, from http://www.landezine.com/index.php/2013/04/arkadien-winnenden-by-atelier-dreiseitl/

Landscape for Life. (2017). Areas of Outstanding Natural Beauty. Retrieved February 25, 2017, from http://www.landscapesforlife.org.uk/

Landschappen NL. (2017). Landschapsobservatorium. Retrieved March 16, 2017, from http://www.landschapsobservatorium.nl/

Landschapsbeheer Zeeland. (2017). Home - Landschapsbeheer Zeeland. Retrieved March 17, 2017, from http://www.landschapsbeheerzeeland.nl/

Landschapsobservatorium. (2017). Landschapsbeleid van de Rijksoverheid - een initiatief van LandschappenNL. Retrieved March 14, 2017, from http://www.landschapsobservatorium.nl/vrijepagina/landschapsbeleid-van-de-rijksoverheid/

Lang, J. (2005). *Urban Design. A typology of procedures and products*. Oxford: Architectural Press.

Lebbe, L., & Claus, J. (2012). *SCALDWIN: Analyse grensoverschrijdende verzilting grondwater in het poldergebied van de provincies Oost-Vlaanderen, West-Vlaanderen en Zeeland. Fase 2, Deelopdracht 3: Analyse toekomstige evolutie zoet-zoutwaterverdeling onder verschillende scenario's*. Gent: Universiteit Gent.

LNV. (1992). Nota Landschap.

LNV. (2009). *Agenda Landschap. Landschappelijk verantwoord ondernemen voor iedereen*. Den Haag: Ministerie van LNV.

LNV, & VROM. (1999). Nota Belvedere. Beleidsnota over de relatie cultuurhistorie en ruimtelijke inrichting. VNG Uitgeverij.

LNV, & VROM. (2006). Handreiking Kwaliteit Landschap 2006. Voor provincies en gemeenten.

MEL. (2017). Métropole Européenne de Lille. Retrieved June 14, 2017, from http://www.lillemetropole.fr/nl/mel.html

Ministère de l'Ecologic, du développment durable et de l'Energic. (2008). Méthode de l'Observatoire photographique due paysage.

Ministère de l'Ecologic, du développment durable et de l'Energic. (2014). Trame verte et bleue et documents d'urbanisme. Guide méthodologique.

Ministerie van de Vlaamse Gemeenschap. (2004). Ruimtelijk Structuurplan Vlaanderen. Ministerie van de Vlaamse Gemeenschap.

Ministerie van de Vlaamse Gemeenschap. Decreet betreffende de landinrichting (2014).

Ministerie van de Vlaamse Gemeenschap. Decreet van 21 oktober 1997 betreffende het natuurbehoud en het natuurlijk milieu (2016).

Natural England. (2009). European Landscape Convention. Natural England's 2009/2010 Action plan.

Natural England. (2016a). Heritage coasts: definition, purpose and Natural England's role - GOV.UK. Retrieved February 25, 2017, from https://www.gov.uk/government/publications/heritage-coasts-protecting-undeveloped-coast/heritage-coasts-definition-purpose-and-natural-englands-role

Natural England. (2016b). Heritage properties: prepare a heritage management plan - GOV.UK. Retrieved February 25, 2017, from https://www.gov.uk/guidance/heritage-properties-prepare-a-heritage-management-plan

Natural England, & Land Use Consultants. (2009). European Landscape Convention Guidance part 3: Preparing an ELC Action Plan.

Natuurpunt Middenkust vzw. (2017). Natuurpunt Middenkust. Retrieved April 14, 2017, from http://natuurpunt-middenkust.eu.pn/

Natuurpunt vzw. (2017). Natuurpunt. Retrieved April 14, 2017, from https://www.natuurpunt.be/

Newcastle University Landscape Research Group. (2009). Establishment of a baseline for, and monitoring of the impact of, the European Landscape Convention in the UK. Executive Summary.

Nottingham University Consultants, Countryscape, Natural England, Defra, & English Heritage. (2007). Countryside Quality Counts. Tracking Change in the Character of the English Landscape, 1999-2003.

Partoer, & Provincie Fryslân. (2014). Fries burgerpanel over landschap in fryslân.

Porter, J., & Brown, M. (2009). European Landscape Convention diagram | Countryscape. Retrieved February 20, 2017, from http://countryscape.org/elc/diagram

Provincie Groningen. (2017). Cultuur historische waardenkaart. Retrieved March 16, 2017, from http://kaarten.provinciegroningen.nl/viewer/app/landschap

Provincie West-Vlaanderen. (2002). Provinciaal Ruimtelijk Structuurplan West-Vlaanderen. Provincie West-Vlaanderen.

Provincie Zeeland. (2006). Uitvoeringsprogramma nationaal landschap Zuidwest Zeeland.

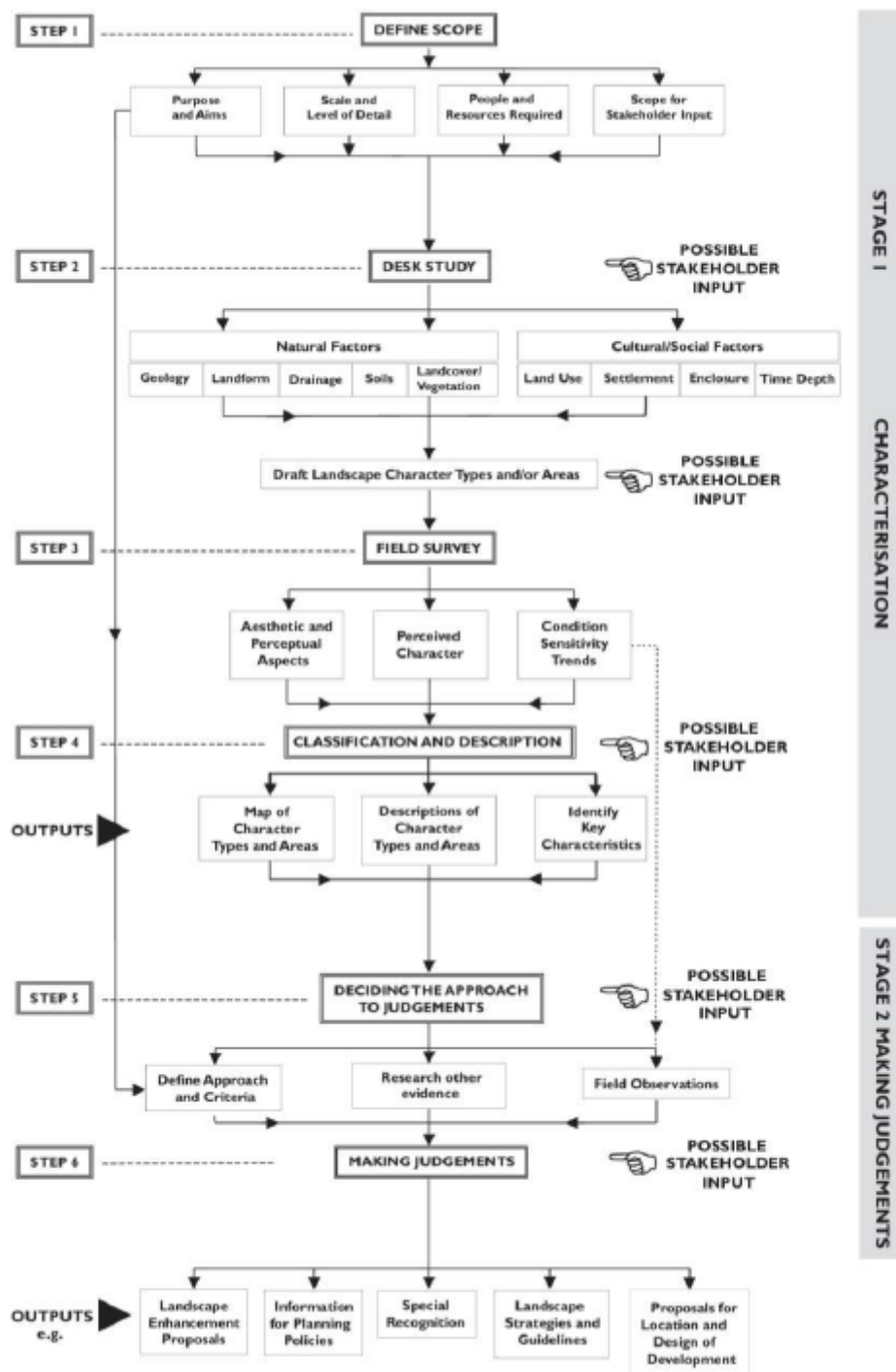Provincie Zeeland. (2012). Verordening Ruimte. Provincie Zeeland.

Provincie Zeeland. (2017). Cultuur Historie waardenkaart. Retrieved March 16, 2017, from http://zldgwb.zeeland.nl/geoloket/?Viewer=Cultuur%20Historie

Région Hauts-de-France. (2017). Région Hauts-de-France. Retrieved June 14, 2017, from http://www.hautsdefrance.fr/

Regionaal Landschap IJzer & Polder vzw. (2017). Regionaal Landschap IJzer & Polder vzw. Retrieved April 14, 2017, from http://rlijp.be/website/wie-zijn-we

Regionale Landschappen. (2017). Regionale Landschappen. Retrieved April 14, 2017, from http://www.regionalelandschappen.be/

Rijksdienst voor het Cultureel Erfgoed. (2017a). Beheer en beleid | Landschap in Nederland. Retrieved March 14, 2017, from https://landschapinnederland.nl/beheer-en-beleid

Rijksdienst voor het Cultureel Erfgoed. (2017b). Bronnen en kaarten | Landschap in Nederland. Retrieved March 16, 2017, from https://landschapinnederland.nl/bronnen-en-kaarten

Rotterdam, G. (2017). Benthemplein | Rotterdam.nl [webpagina]. Retrieved June 16, 2017, from https://www.rotterdam.nl/wonen-leven/benthemplein/index.xml

Royal, S. Loi sur la protection et la mise en valeur des paysages et modifiant certaines dispositions législatives en matière d'enquêtes publiques (1), Pub. L. No. 9324 (1993).

Royal, S. Loi pour la reconquête de la biodiversité, de la nature et des paysages, Pub. L. No. 2016–1087 (2016).

Royale, S. (2014, September 25). Conseil des ministres du 25 september 2014. La reconquête des paysages et la place de la nature en ville. Retrieved from www.discours.vie-publique.fr/notices/146002158.html

Sala, P., Puigbert, L., & Bretcha, G. (2014). *Landscape planning at a local level in Europe. The cases of Germany, France, the Netherlands, the United Kingdom, Switzerland and the Walloon Region in Belgium*. Olot: Observatori del Paisatge de Catalunya.

SASAKI. (2014). Sea change boston. City of Boston.

SCAPE. (2017). *Seminar report. SCAPE cross-border seminar on landscape understanding and water management.*

SPPEF. (2017). Société pour la Protection des Paysages et de l'Esthétique de la France. Retrieved June 15, 2017, from http://www.sppef.fr/objectifs-et-moyens/

Susdrain. (2017). Derbyshire Street Pocket Park, London Borough of Tower Hamlets. Retrieved June 16, 2017, from http://www.susdrain.org/case-studies/case_studies/derbyshire_street_pocket_park_london_borough_tower_hamlets_1.html

The Countryside Agency. (2016). Countryside Character Initiative. Retrieved February 21, 2017, from http://www.snh.org.uk/wwo/sharinggoodpractice/CCI/cci/

The Countryside Agency, Scottisch Natural heritage, Swanwick, C., & Land Use Consultants. (2002). Landscape Character Assessment. Guidance for England and Scotland.

The World Bank. (2015a). GDP per capita (current US$) | Data. Retrieved April 20, 2017, from http://data.worldbank.org/indicator/NY.GDP.PCAP.CD?view=chart

The World Bank. (2015b). Population density (people per sq. km of land area) | Data. Retrieved April 20, 2017, from http://data.worldbank.org/indicator/EN.POP.DNST

The World Bank. (2015c). Population, total | Data. Retrieved April 20, 2017, from http://data.worldbank.org/indicator/SP.POP.TOTL

The World Bank. (2016). Surface area (sq. km) | Data. Retrieved April 20, 2017, from http://data.worldbank.org/indicator/AG.SRF.TOTL.K2

Timmermans, W. (2017, February). *Landscape sensitive design. Climate change, water management and landscape led design.* Presented at the SCAPE Seminar, Knokke-Heist.

Timmermans, W., Jacobs, C., & van Hattum, T. (2017). Cities, Climate Change, Water management and landscape led design, het voorbeeld Middelburg.

UK Parliament. Environment Act 1995 (1995). Retrieved from http://www.legislation.gov.uk/ukpga/1995/25/introduction

UK Parliament. Natural environment and rural communities Act 2006 (2006). Retrieved from http://www.legislation.gov.uk/ukpga/2006/16/contents

UN, & WCED. (1987). *Our Common Future.*

Vacher, G. (2017). Le découpage de la France. Retrieved June 14, 2017, from http://www.annuaire-mairie.fr/decoupage-de-la-france.html

Van Eetvelde, V. (2007). *Van geografische strekenkaart tot landschapsdatabank. Gebruik van GIS, informatietheorie en landschapsmetrieken voor het karakteriseren van landschappen, toegepast op België.* Universiteit Gent, Gent.

van Herwaarden, G.-J. (2002). Landschapsontwikkelingsplan. Een handleiding voor het laten opstellen van landschapsontwikkelingsplannen. Landschapsbeheer Nederland.

Vanempten, E. (2010). Parc de la deûle. In *Designing for a region* (Vols. 1–4, pp. 188–199). Amsterdam: SUN.

Vlaamse Overheid - Departement Omgeving. (2017, June 12). Ruimtelijke strategieën. Retrieved June 12, 2017, from /ruimtelijke-strategie%C3%ABn

VLM. (2017). VLM - Home. Retrieved April 20, 2017, from https://www.vlm.be/nl/

VROM. (2006). Nota Ruimte. Ruimte voor ontwikkeling. Katern over nieuw ruimtelijk beleid in 2006. VROM.

Winsemius, p. Wet ruimtelijke ordening (2006).

WLA. (2017). Derbyshire Street Pocket Park. Retrieved June 16, 2017, from http://worldlandscapearchitect.com/derbyshire-street-pocket-park%e2%80%a8-london-uk-greysmith-associates/#.WUPgaGjyj4Z

Wong, T. (2006). Water sensitive urban design-the journey thus far. *Australian Journal of Water Resources*, *10*(3), 213–222.

Wong, T., & Brown, R. R. (2009). The water sensitive city: principles for practice. *Water Science and Technology*, *60*(3), 673–682.

Woods, B., Wilson, S., Udale-Clarke, H., Illman, S., Scott, T., Ashley, R., & Kellagher, R. (2015). *The SuDS Manual, C753, CIRIA, London, UK*. ISBN 978-0-86017-760-9. http://www. susdrain. org/resources/SuDS_Manual. html.

WVI, & Stad Oostende. (2006). Gemeentelijk Ruimtelijk Structuurplan Oostende.

VII. APPENDIX

VII.I. LCA – FLOW DIAGRAM

(The Countryside Agency et al., 2002, p. 13)