ESPON

LP3LP
Landscape Policy for the Three Countries Park

Targeted Analysis 2013/2/21

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Main Report

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This report presents the final results of a Targeted Analysis conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

The partnership behind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

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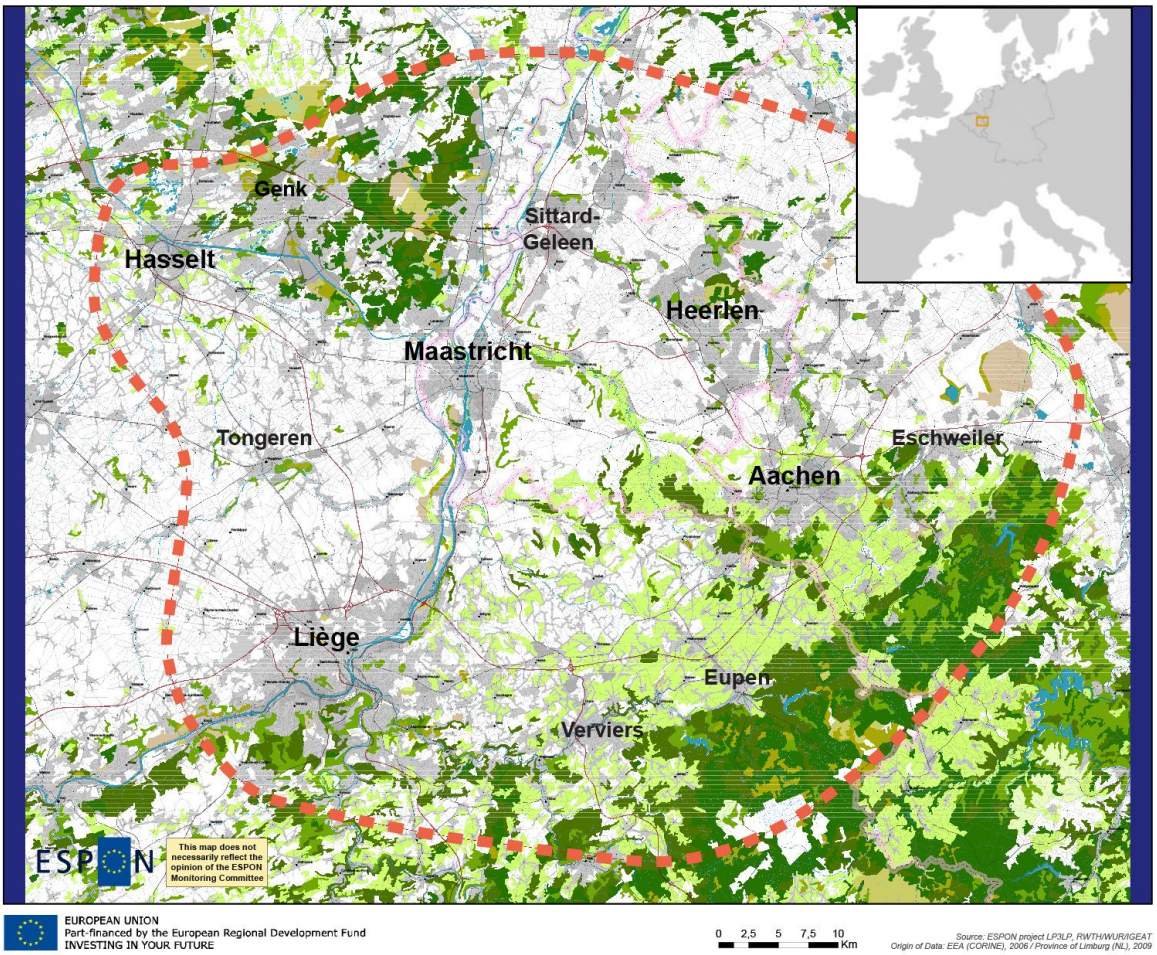
Abbreviations

3LP: Three Countries Park (Drielandenpark/Parc des Trois Pays/Dreiländerpark)
CAP: Common agricultural policy
CBPMR: Crossborder polycentric metropolitan region
CLLD: Community led local development
ELC: European Landscape Convention
EAFRD: European Agricultural Fund for Rural Development
EAGGF: European Agricultural Guidance and Guarantee Fund
EIP-Agri: European Innovation Partnership ‘Agricultural productivity and sustainability
EMR: Euregio Meuse Rhine
ERDF: European Regional Development Fund
ESPON: European Observation Network for Territorial Development and Cohesion
EU: European Union
GHG: Greenhouse gases
GI: Green infrastructure
GPP: Green public procurement
ITI: Integrated territorial investment
LIFE: L'Instrument Financier pour l'Environnement
LQO: Landscape quality objectives
LP3LP: Landscape Policy for the Three Countries Park
LULUCF: Land use, land use change and forestry
MAHL: Maastricht, Aachen, Heerlen, Liège cross-border city network
MAHHL: Maastricht, Aachen, Heerlen, Hasselt, Liège cross-border city network
PES: Payments for ecosystem services
WFD: Water framework directive

1. Introduction

Being an ongoing cooperation for cross-border landscape development, the 3LP is an existing stakeholder initiative that started in 1993 as a concept focusing on rural area in the trinational Euregio Meuse-Rhine (BE-NL-DE). Today, the 3LP represents a regional "framework for cooperation" (no official administrative status), with a loosely defined project area extending around the outer edges of the city ring Maastricht – Hasselt – Genk – Sittard – Geleen – Heerlen – Aachen – Eupen – Verviers – Liège.



Map 1 Approximate extent of the 3LP project area

Historically, the region has been a European node, for example with having been a transition space of the Roman Empire, the center of the Carolingian Empire, part of the European Coal and Steal Community or the signing place of the Treaty of Maastricht. Also regarding its geographic setting, it is located at the verge of the European plains and middle mountains and contains parts of the European loess-band. It is crossed by major European road-, rail- and waterways and ecological corridors. Particularly, it is centrally located within a supra-regional network of urbanized areas including the German Ruhrgebiet and Rheinschiene, the Dutch Randstad or most of Belgian territory. Internally, the region comprises a high variety of different landscapes, containing parts

characterized e.g. by *bocage* (small scale hedge patterns), open fields, forested areas, wide valley floors and largely built out areas.

From a 3LP stakeholder perspective and similarly within other CBPMR in Europe, the region's landscape assets provide strong added values for regional attractiveness. Nevertheless, a cross-border perspective is required to respond to European dynamics to its landscapes, such as e.g. related to land use intensification or suburbanization. Policy support is needed for co-ordination and development of spatial functions to preserve and enhance the core qualities of the landscape of the stakeholders region.

From a European perspective, a unique identity of the 3LP can be examined at a larger scale. Particularly, the 3LP forms an apt case study regarding potential effects and demands of EU policies: How to ensure smart, sustainable and inclusive economic growth or at least stability? How to increase cohesion across borders and jurisdictions? How to invest in diversity with place-based and complementary approaches? Approaching such questions – by focusing on landscape – is a key topic of the LP3LP project (together with the LIVELAND project[1]).

1.1. LP3LP project aims

The major LP3LP project aims at developing a landscape policy[2] for the Three Countries Park including the following three objectives:

(1) The examination of the 3LP's European identity, including regional and European dynamics

(2) The design of a cross-border landscape perspective for the future development of the 3LP

(3) Recommendations for the interface between the 3LP landscape perspective and EU policy

The results of the LP3LP project will serve for the involved public authorities as a common source of inspiration for cross-border integration of spatial policies and landscape policies in the 3LP as well as for improvement of their own spatial and landscape policy. Furthermore, the project aims at a transferability of results by identifying the universal findings from the analysis, general principles and measures from the landscape perspective and the policy recommendations. These, along with a reflection on the LP3LP project's own learnt lessons during the project development, are distinguished according to applicability to (1) all European regions (2) other cross border regions or (3) to specific cross-border polycentric metropolitan regions (CBPMR) with partially similar characteristics to the 3LP.

[1] LIVELAND and LP3LP are the first two projects within the ESPON context that examine the role of landscape for territorial development.

[2] According to the European Landscape Convention 'landscape policy' is defined as "an expression by the competent public authorities of general principles, strategies and guidelines that permit the taking of specific measures aimed at the protection, management and planning of landscapes" Council of Europe (2000, pp. Art. 1b).

1.2. Hypothesis – the Three Countries Park (3LP) as a future "European cross-border landscape partnership" celebrating cohesion and diversity

As explained already from a historical and geographical viewpoint, the 3LP seems rather special for a cross-border area – having a touch of a 'heart of Europe'. Moreover, three countries and four[3] language communities are bordering each other. Cross-border living and multilingualism is usual. Today, the region is one of the forerunners regarding cross-border landscape policy – i.a. with having the 3LP project since the mid 90's. It has therefore been early hypothesized within the LP3LP project, that the 3LP can become a cross-border testing ground for improving the effectiveness of European policy: to develop a cohesive and diverse European landscape that in turn can contribute to achieving overall European objectives of smart, inclusive and sustainable growth. This hypothesis is underlying the entire project; it is addressed specifically in Chapter 4.1, where the 3LP is re-interpreted in form of a future "European Landscape Partnership".

1.3. Research approach and methodology

Phase A of the project determined the particular identity of the 3LP in the European context, including regional and European dynamics. Apart from investigating basics on landscape and concepts for achieving local and European goals through investment in landscape quality, the use of ESPON studies and results informed us about global dynamics that may have an impact at the regional level along with comparisons with other European (cross-border) regions. At the same time, a review of European policy documents that may have a significant impact on both image and usage of landscape was carried on, in parallel with the stakeholders' existing (cross- border) perspectives.

Phase B was dedicated to the development of the landscape perspective, nourished by themes and issues that arose in the previous phase. This Phase started with taking stock of the unique regional capital and potentials inherent in the landscape, and summarized it with five core qualities. The following process was structured as an iterative design process, and included three stakeholder workshops. This information was used to formulate and establish a shared vision on the future of landscape in cross-border collaboration resulting in a cross-border landscape perspective.

Phase C was dedicated to the recommendations regarding the interface between landscape policy of 3LP and European Policies. Main policy documents in EU policy areas matching with themes of the 3LP initiative were analyzed with prospect to the period 2014-2020. In a first step, policy objectives were interpreted with regard to the demands they impose on landscapes. In a second step, the European policy context as well as European funds and support instruments were investigated upon suitable means for implementation of the 3LP landscape perspective. Finally, informed by discussions in expert and stakeholder meetings, policy recommendations linking the European and regional 3LP scale (considering both a top-down and bottom-up path) were derived in the form of a governance proposal for the case study and four thematic strategies.

[3] Besides French, Dutch and German, 'Platt' – a local dialect – is spoken across the borders.

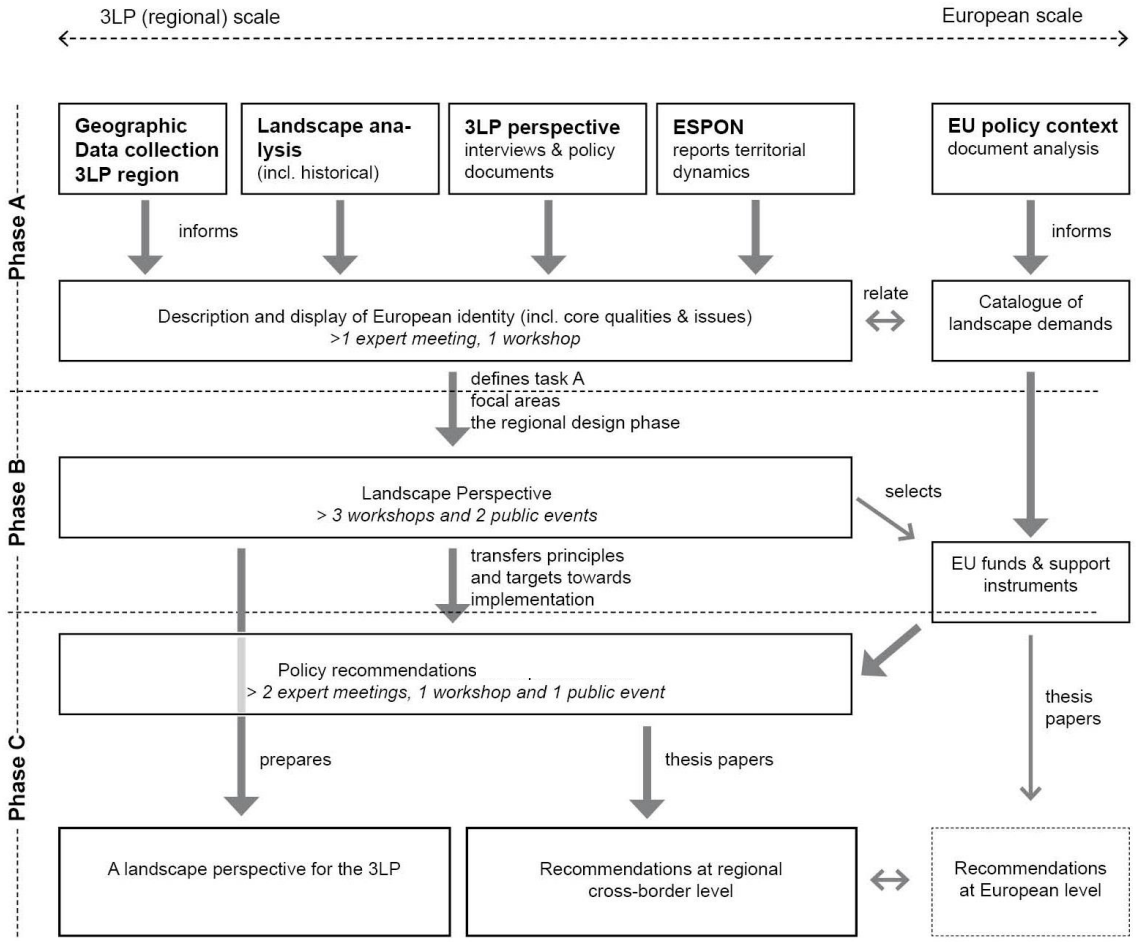


Figure 1 Diagram of research approach and used methodologies *(source: own elaboration)*

1.4. Partners and organisation structure

Transnational project group (TPG) The ESPON project "Landscape Policy for the Three Countries Park" (LP3LP) is conducted by the following three universities:

- RWTH Aachen University, DE (Lead Partner)
- Wageningen Universiteit, NL
- Université libre de Bruxelles, BE

Stakeholders

- Province of Limburg, Department of Spatial Development, NL (Lead Stakeholder)
- The Operational General Direction for land use planning, housing, heritage and energy of the Wallonia public service, BE
- The Flemish Region, The Department for Spatial Planning and Cultural Heritage, BE
- City region of Aachen, The Department of Building and Environment, DE
- City of Aachen, The Department of Planning and Environment, DE

Observers

- Province of Limburg, BE
- Bezirksregierung Köln, DE

2. Landscape - a cross-border territorial asset in Europe

2.1. Landscape, landscape policy and territorial development

2.1.1. What is landscape?

The understanding of 'landscape' varies with language, culture and epoch, discipline and individual experiences. In the English language 'landscape' is commonly understood as "*a view or vista of scenery on land*" and "*a picture depicting such a view*" (The American Heritage dictionary, 1994, p. 469). In different scientific, political and planning contexts the conception of the landscape category is usually broader, encompassing also other landscape experiences as well as physical-material components and interactions that actually create the visual landscape. In Europe two major conceptions of 'landscape' emerged throughout history: the ***culturalist*** (or aesthetical) ***and*** the ***naturalist*** (or functionalist) ***conception*** (Donadieu and Perigord, 2007)[4]. The former emphasises how landscapes are perceived, leading to the identification of aesthetic, heritage and symbolic values of a landscape. The latter focuses on the functioning of ecosystems and landscape-ecological processes and how they provide the physical basis of society. Culturalist and naturalist approaches tend to merge during the second part of the 20th century (Scientific Report, Ch. II.3.4). In an integrating attempt the European Landscape Convention (ELC) considers landscape as "*part of physical space*" (Committee of Ministers, 2008, I.2) and defines: *"'Landscape' means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"* (Council of Europe, 2000, Art.1a). '***Landscape'*** is applied ***as a territorial concept*** equally addressing rural areas, 'cityscapes' (urban & industrial areas), 'waterscapes', as well as high-quality, ordinary and degraded landscapes (ibid. Art.2).

Figure 2 Three examples of landscapes within the 3LP area *(Image sources: LP3LP team)*

[4] The two approaches to landscape have also been termed the "subjectivist" and "objectivist" paradigms (Kirchhoff 2009).

This project basically follows the ELC landscape definition and considers (the historical duality of*)* ***the 'perceived landscape' and the 'physical landscape' as two sides of the same coin***[5]. Additionally, with a view to clarifying the relation of 'landscape' with other regional-political terms it is suggested to conceive the ***landscape as the distinctive physical and perceivable form of 'territory' and 'environment'***[6]. Depending on viewpoint, the landscape can be perceived and assessed on multiple scales, e.g. as a local scene, place or composition of places, as a regional integrity, or even globally as a section and face of the terrestrial land surface. Actually, the process of landscape perception often involves a few scales simultaneously (Grodzynskyi and Grodzynska, 2009). In this project landscape is mainly approached on the regional scale of the 3LP with some excursions to the local scale. Furthermore, the meaning of landscape for a balanced territorial development on the European scale is explored. Last, but not least it is important to note that the notion of 'landscape' (rather than territory or environment) is explicitly associated with the ***concrete spatial-temporal dimensions of an area***, i.e. its ***characteristic shape and individual changes***. Landscapes thus reflect social-ecological relations of the past and can serve as projection screen for desirable futures. An expert meeting supported by a literature review revealed the high level of interrelation of elements forming landscapes and their identities, as illustrated in Figure 3. More detailed results of the meeting can be found in the Scientific Report (Ch. II.2.1./2.2).

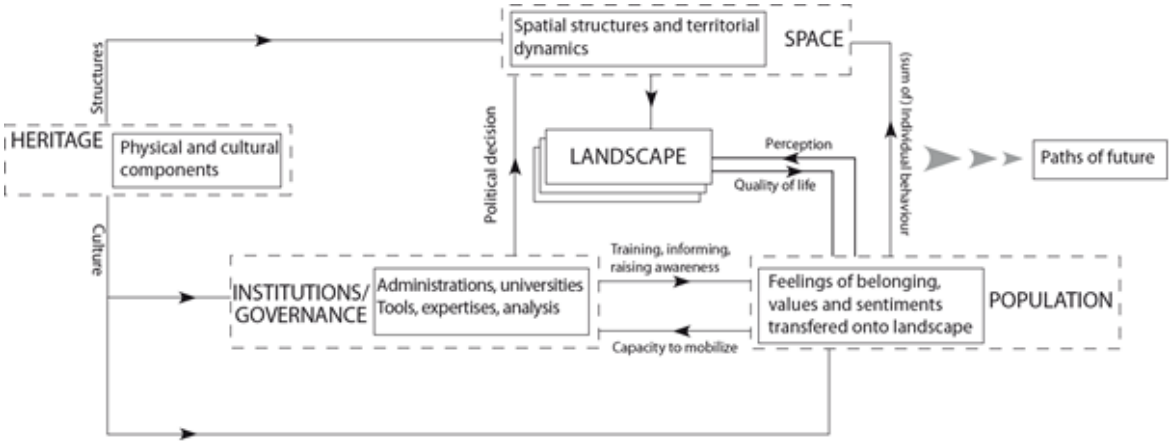


Figure 3 Model of interrelated factors influencing 'landscape' *(source: own elaboration)*

[5] A particular physical landscape, on the one side, always underlies different subjective perceptions of that same landscape. On the other side, the physical landscape, even if it is assessed with 'objective' natural science methods (e.g. remote sensing, in situ measurements etc.), always is a landscape perceived and interpreted by humans, i.e. by different experts with different research approaches.

The LIVELAND project adds a third dimension of "landscape as institution" (ESPON Liveland, 2013). We support the point, that the way how landscape is institutionalized, e.g. by property regimes, land use rights or planning systems etc. is a very important aspect for landscape policy implementation. It is to a certain extent addressed in this study in the landscape partnership proposal. However, to consider landscape itself an institution seems difficult to us.

[6] Whereby "environment" means "the combination of elements whose complex interrelationships make up the settings, the surroundings and the conditions of life of the individual and of society, as they are or as they are felt" (http://glossary.eea.europa.eu/terminology); and territory: "a. An area of land, b. The land and waters under the jurisdiction of a government, c. A political subdivision of a country" (http://ahdictionary.com)

2.1.2. Quality landscapes for people, society and economy: political concepts

Landscapes are public goods and hold a variety of values, which are mostly not accounted for financially and make them subject to political decisions. While the European Union has no designated competence in landscape policy itself, landscape is marginally considered under environmental, regional and cultural policy. Here the traditional heritage concept of landscape seems to prevail (ESPON Liveland, 2012). In contrast, via the ELC, the Council of Europe explicitly requires signatory countries to establish landscape policies and integrate it with their regional and sectoral policies (Council of Europe, 2000, Art.5). Central element of landscape policies are ***landscape quality objectives*** (LQO), defined as "*the formulation by the competent public authorities of the aspirations of the public with regard to the landscape features of their surroundings*" (ibid. Art.1c). LQO are to be met by means of ***landscape protection, planning and management***[7] (Art.6E). The ELC therewith tries to overcome the conservative heritage concept of landscape and takes on an active developmental position with "*the desire to confront, head-on and in a comprehensive way, the theme of the quality of the surroundings where people live; this is recognised as a precondition for individual and social well-being and for sustainable development, as well as a resource conducive to economic activity*" (Committee of Ministers, 2008, I.2).

With regard to the 3LP, Belgium and the Netherlands both ratified the ELC, Germany did not sign. However, Germany, similar to the Netherlands, has a long tradition in landscape policy. In the French speaking community traditionally a more culturalist conception of '*paysage*' is common, whereas in Germany a more naturalist approach of '*Landschaft'* predominates since the end of the Second World War to overcome the abuse of the landscape category by the Nazi regime (Kirchhoff and Trepl, 2009). In the Netherlands an integrated approach prevails (Map3 / Scientific Report, p. 26). In Germany and the Netherlands the concept of spatial and ***landscape functions*** is used in landscape policy. In Germany landscape functions are broadly defined as the actual or potential capacity ("*Leistungsfähigkeit*") of landscapes to fulfilling human (material and immaterial) demands to ecosystems ("*Naturhaushalt*") and landscape experience ("*Landschaftserleben*") (Haaren, 2004, p. 81) (translated). The concept of landscape functions therewith overlaps very much with the concept of ***ecosystem services***[8] (Table 1), a concept which has recently been recognized by the EU's Flagship Initiative for Resource Efficiency and the Biodiversity Strategy (European Commission, 2011k, 2011f). Ecosystem services are "*the direct and indirect contributions of ecosystems to human well-being*" (Groot *et al.*, 2010, p. 25). They comprise provisioning, regulating, cultural and habitat/ supporting services

[7] According to the European Landscape Convention "'landscape protection' means actions to conserve and maintain the significant or characteristic features of a landscape […]. '*Landscape planning' means strong forward-looking action to enhance, restore or create landscapes. 'Landscape management' means action, from a perspective of sustainable development, to ensure the regular upkeep of a landscape, so as to guide and harmonise changes which are brought about by social, economic and environmental processes"* (ibid. Art.1).

[8] The LIVELAND project uses the concept of landscape functions, i.e. regulating, production and cultural functions, in relation to different domains of happiness in order to grasp the contribution of landscape and landscape planning to liveability. The similarity to the ecosystem services approach is also stressed (ESPON Liveland, 2013).

(TEEB, 2010a). In ecosystem service assessments ecosystems are often delineated according to land use/ land cover classes, which are also typical categories in landscape analysis together with relief, soils and water system etc. (see Atlas of Maps). Thus ecosystems like forests, wetlands, grasslands, croplands, and urban areas etc. can be considered part of landscapes. Furthermore, ecosystem services are often generated not by single ecosystems, but by discrete spatial-temporal ecosystem patterns and processes in the landscape. Therefore ecosystem services may also be termed "*landscape services*" (Opdam and Termorshuizen, 2009). In the landscape sciences there is a tendency to merge the fields of ecosystem service research and multifunctional landscape development (Kienast *et al.*, 2009; Hermann *et al.*, 2011; Groot *et al.*, 2010).

Spatial / Landscape functions[a)]	Ecosystem services[b)]	c)	
Multifunctional landscape	Provisioning of multiple services		
Production/ carrier functions	**Provisioning services**	Provisioning of site and resources	Classical production factors
Site for housing, transportation, energy networks, production	–		
Non-renewable resources	–		
Renewable resources	Provisioning of renewable resources (incl. energy sources, biomass, biochemicals, timber, medicinal & genetic resources etc.)		
	Provisioning of food sources		
Regulation functions	**Regulating services**	Regeneration of life and favourable living and production conditions	Sustainable growth
Climate function and air quality	Carbon sequestration and storage		
	Local climate and air quality regulation		
Water resources function and retention function	Water regulation/ provisioning of fresh water		
	Water regulation/ moderation extreme events		
Natural yield function	Erosion prevention/ maintenance of soil fertility		
(partly covered by two functions above)	Waste (water) treatment and nutrient cycling		
–	Pollination		
–	Biological control		
Habitat functions	**Habitat/ Supporting services**		
Biodiversity function	Habitat provisioning (including habitats along migratory routes)		
	Maintenance of genetic diversity		
Information functions	**Cultural & amenity services**	Recreation of productive human capabilities	Smart & inclusive growth
Landscape experience function (including recreational function)	Recreation and mental and physical health		
	Aesthetic appreciation and inspiration for culture, art and design		
	Knowledge and educational experience		
	Spiritual experience		
	Identity, sense of place, sense of history		
Archive function			

traditionally naturalist conception of landscape (e.g. landscape ecological research)

trad. culturalist conception (e.g. cultural landscape research)

Table 1 Correspondence of landscape functions with ecosystem services and their contribution to smart, sustainable and inclusive growth

Sources: a) (Kienast et al., 2009), main categories (Maarel and Dauvellier, 1978, pp. 134–164; Groot, 2006, pp. 177–179), subcategories: (Haaren et al., 2008); b) (TEEB, 2010b), (Millennium Ecosystem Assessment, 2005; Natural England, 2009), c) (Brüll, 2013)

With the concept of ecosystem/ landscape services it is possible to describe and assess ***non-commodified value-creation in landscapes largely contributing to smart,***

sustainable and inclusive growth (see Table 1 above and the 'landscape value chain' in the Scientific Report, p. 135). This is regarded crucial for a landscape policy linking to both local-regional aspirations and European policy oriented towards economic growth and job creation (European Commission, 2010a, 2011b) (Chapters 2.2.3 and 5).

Landscape quality objectives (LQO) are also critical for identifying values generated in the landscape, as they are based on the values people attach to specific places, features or compositions of landscapes. LQO may be particularly associated with cultural services. However, LQO may also relate to further aspects of the landscape such as water (quality) and biodiversity. The landscape perspective developed in this project relates to both 'core qualities' of the 3LP landscape as well as ecosystem/ landscape services (Chapters 3.3 - 3.4). It defines structural principles, which can be understood as landscape quality objectives on a regional scale. However, no specific local LQO are defined for the 3LP in this project, since this would have required a much broader analysis and public involvement.

Nevertheless, '***quality landscapes***[9] – ***as a potential political goal*** for 3LP and other European regions – may be considered those landscapes, which not only appear as being of high aesthetic, recreational and heritage value but also ***meet demand for*** other ***key functions and services*** (Brüll, 2013). Landscapes, understood and managed in this way, basically ***build the foundation of a balanced territorial development***. They provide not only the living surroundings of people (inhabitants and visitors), but also the habitats for species as well as (metabolic) environments for industries – and are vice versa shaped by a close interaction of all of these factors. In order to facilitate the integrated consideration of various public and political demands (Chapter 2.2.3) imposed on the landscape – to be met by multifunctional service supply – it is suggested here, in addition to the definitions above, to furthermore conceive the ***landscape as a 'nature-culture-hybrid' constituting common living & production space of human societies, their economies and other living communities*** (ibid.).

2.2. The European context of a regional landscape

2.2.1. The example of the 3LP and its geomorphological and historical location within Europe

Landscape change often results from political, economic and technological dynamics in the course of history. This is also perceivable in the Three Countries Park (3LP) area, situated between the plains and middle mountains of North-West-Europe. As Chapter 1 has already highlighted, the ancient and densely populated area forms today a European node that has been shaped by different epochs of European development: Already in the ***Neolithics and Band Ceramics***, first agriculture appeared in the region. The ***Roman Empire*** brought new occupation patterns, introduced roads and more permanent settlements in the landscape. Urbanized axes appeared along the Rhône, Moselle and Rhine valleys, while the rural "villae"-settlements exploited the areas with loess soils. In

[9] The term "*quality landscapes*" was coined in the last stakeholder workshop of the LP3LP project.

the period between 750 and 850 the 3LP area contained the center of the ***Frankish Empire*** (Charlemagne), which expanded over extensive parts of Europe, leaving castles, monasteries and estates in the landscape. After the death of the king, its territory was divided over and over again, eventually becoming a patchwork of principalities, counties and dukedoms (Leersen and Jansen, 1994). During the 12th and 13th centuries, a ***commercial system between Northern Italy and Flanders*** established. Rivers (Pô, Rhone, Saône, Moselle, Meuse, Rhine) or canals became major means of transportation while the roman roads rather degraded. Wealth accumulated, based on non-agricultural activities of a strong and organized bourgeoisie. A network of dense cities reinforced and drove economic development, such as in the Rhine area (Robert, 2011). (Vandermotten and Dézert, 2010).

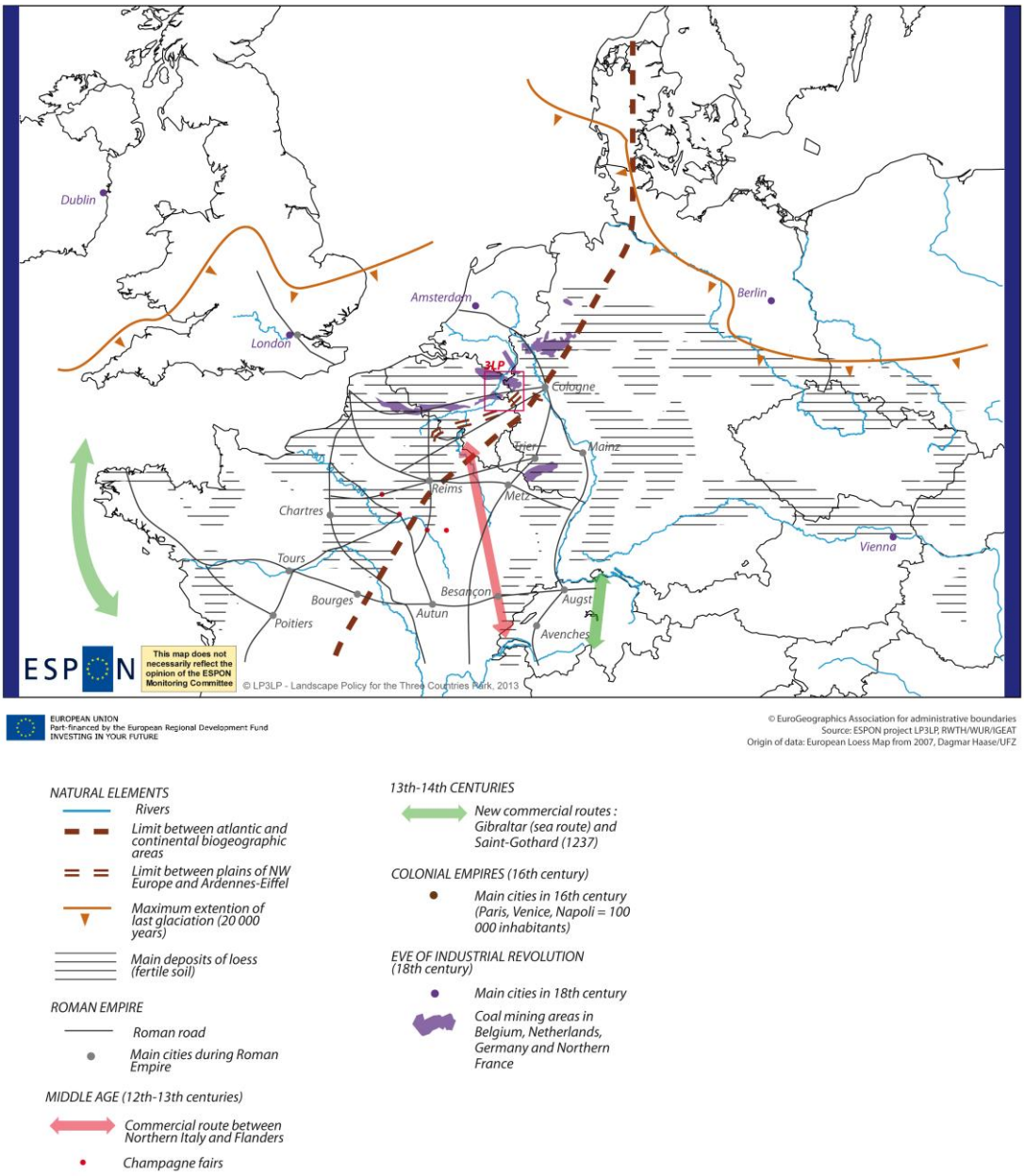


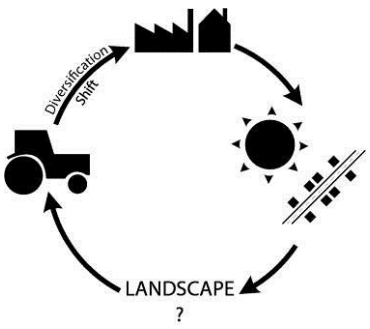
Figure 4 The 3LP in the North-West European geomorphological and historical context *(source: own elaboration)*

During the 14th century, parts of the 3LP area began to specialize in agricultural production, e.g. in the 'Pays de Herve' with increased cattle breeding (Ubachs, 2000). It is assumed that this period marks the start of the *bocage* landscape in the 'Pays de Herve' as hedges were needed to keep livestock. The rural area though, was still multifunctional at that time, e.g. via groups of workshops. In the 18th century, ***new agricultural techniques*** (incl. disconnections between livestock and cropping) transformed the territory, enabling increased productivity and demographical growth. The integration of Belgium and the Rhineland in the ***French Republic*** in 1796 ended the political patchwork situation mentioned earlier. The treaties of Vienna (1815) and London (1839) divided the region into Germany, the Netherlands and Belgium and resulted in hinterland effects (Leersen and Jansen, 1994). During the 19th century, the ***industrial revolution*** brought urban growth and rural exodus. Big manufactures appeared in cities, heavy industries in mining regions, while rural areas received a more monofunctional character. Around Liège and in the Northern part of the 3LP area, (coal) mining developed and resulted in a polycentric urban pattern (Bosma, 1993). In the 20th century, especially after the Second World War, the dichotomy between rural and urban areas dissolved in terms of spatial morphology and life styles, especially due to suburbanization. At the same time, agricultural production specialized further and increased with technical development (Ubachs, 2000), introducing larger-sized plots – especially in the *Haspengouw* and *Jülicher Börde*. (For a more detailed description of the historical development of 3LP see Scientific Report, pp. 12-16.)

2.2.2. European territorial dynamics affecting 3LP

For a landscape policy it is not only important to consider the past and its remnants perceivable in the landscape as a rich source of (European and cross-border) identity, rootedness, sense of place and cultural meaning, but also to consider on-going trends and potential future impacts. In this project, various ESPON studies were used to characterize territorial dynamics likely to impact regional landscapes. The following four dynamics meet some of the issues discussed at the first ESPON LP3LP expert meeting like energy and climate change, quality of life and sustainability, urbanisation process, and economic competition. They are also in line with topics identified by former 3LP strategic documents (Projectgroep Drielandenpark, 2003) and reports (Institut Destrée 2013).

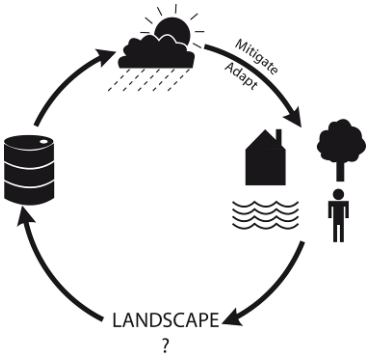
Intensification of land use and economic diversification



The European landscape convention acknowledges the fact that the transformation of landscapes is accelerated by the main sectors of economy (agriculture, forestry, industrial, mineral production, tourism and recreation), by regional and town planning, transport, infrastructure and at a more general level, by changes in the world economy. The dynamic relationships between economic activities and land use have led to an 8.8% increase of the share of artificial surfaces between 1990 and 2006 to reach 4.4% of the EU territory (ESPON EU-LUPA draft final report, p30). Due to

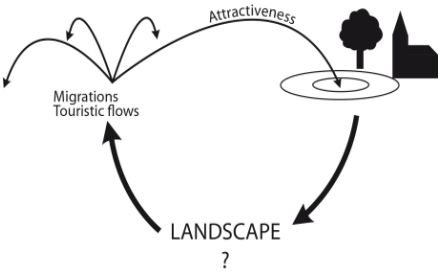
predominantly urban and infrastructural related changes many European regions including 3LP, have experienced a significant increase in land use intensity and a high rate of land cover changes. Residential, new infrastructure development and the modernisation of agriculture and of local industries induced by the globalisation have contributed to increased soil sealing, territory fragmentation and standardisation of both rural landscape and cityscape. On the one hand, these trends endanger the landscape amenities provided by the core qualities of the 3LP (see Chapter 3.3) and the supply of authentic experience of natural and cultural assets. On the other hand, the social re-composition of the rural society brings new demands about their surroundings (cultural heritage, landscape and nature preservation and/or reconstitution, symbolic and historic meaning of the countryside, communication network, commuting facilities, etc.), which opens new opportunities for economic development: land, landscapes, natural environment but also wider cultural and heritage assets become important factors of the local economy. The shrinkage of agricultural land in the 3LP and the globalisation of agricultural markets lead big farms to grow further and small farms to diversify in local food networks, touristic offers, agri-environmental schemes, or part-time activities (LP3LP, 2nd expert meeting).

Climate change mitigation and adaptation



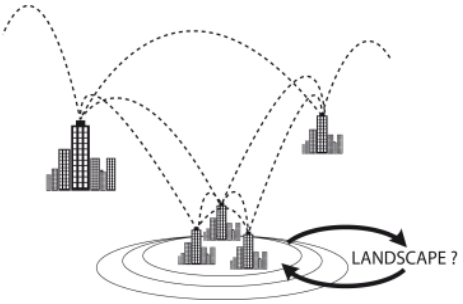
The interactions between climate change and European landscapes and ecosystems are numerous and complex. According to Ribeiro et al. (2009) two particular sectors stand out as being sensitive to climate change: namely human health and landscape management. In the recent years, some alarming climatic events have affected the 3LP: floods, drought followed by fire, presence of new alien species. Even if it is impossible to tell how far climate change is responsible for these events, it has aroused public awareness about this issue. The ESPON Climate report considers that in the future the 3LP area may suffer from negative impacts because of climate change. However, the region has a high capacity to adapt to and mitigate these changes. The implementation of adaptation and/or mitigation projects will affect the regional landscape: renewable energy production affects landscape in an obvious way through wind turbines in Germany and Belgium, for example, or solar panels, and in a more subtle way through biomass production (e.g. Energy Wood Eifel project). Some projects are focusing on the issues of river flooding / heavy rainfall (e.g. Aquadra project). Another important issue linked to the new energy paradigm is to evaluate the vulnerability of EU regions to the rise of energy prices, studied by the ESPON RERISK project. The 3LP is part of a wide area characterised by high levels of commuters, of disposable income and industrialization and a medium level of employment in industries with high energy purchase. Therefore, an increase of the level of fuel cost in the future would modify the economic structure of the region.

Demographic change and territorial attractiveness



Demographic trends in Europe are expected to be an important challenge in the coming future. The most important force behind European population change is international and regional migrations. Contemporary societies are indeed characterized by an increasing human mobility taking place within a series of global networks (transnational companies, informal economic network, diaspora, scientific networks, etc.). Other dynamics are the decreasing population growth, increasing proportions of the elderly and the declining population. The 3LP shows a demographic profile close to the European average: the age structure is slightly older, a stagnating natural population balance and a positive net migration rate are prevalent. Net migrations affecting the 3LP are slightly positive, like many peri-urban regions in North West Europe. Landscape as a local asset can play a more consistent role in the long term attractiveness of the 3LP as a place to live or as a touristic destination. Touristic attractiveness and infrastructures (accommodation, transport network) are not uniform over the 3LP territory. These touristic infrastructures will benefit from thoughtful land planning and landscaping interventions. Compared to other parts of Europe, 3LP is enjoying a high to very high accessibility and a high density of tangible heritage (ESPON 1.3.3).

Suburbanization and polycentric development



The core-hinterland relationship is a key element for understanding the most important visual effect of metropolisation: urban sprawl, leading often to homogenization of landscapes and shrinking of agricultural land. In the 3LP territorial context, the phenomenon has its importance as it deeply impacts landscape directly through the urban forms of agglomerations or indirectly through related infrastructure. The 3LP has an inherited structure with efficient networks leading to a high polycentric potential. The picture is nevertheless diversified: a stronger development of the west-east axis than the north-south axis confirming the heterogeneous co-operation between the partners (ESPON Metroborder, 2010), a reurbanization in major cities and a counter urbanization in smaller ones, a more pronounced urban sprawl in the Belgian part of the 3LP. It has been recognized from the start that the urban areas would be the drivers of the polycentric cross-border structure of Maastricht, Heerlen, Aachen, Liège (MHAL). The medium-sized towns have their cards to play in the globalisation context by offering new employment opportunities within a good-quality and diversified living environment. However functional interactions between the three countries (measured by cross border employees) are weak. This dynamic has been examined in detail in the Scientific Report (see Chapter II.3.6. Polycentrism and City/Countryside relations in ESPON documents).

Discussion: These four dynamics have fuelled 3LP landscape policy development in this project by underlining several major issues of landscape planning in the 3LP. They are raising challenges that are addressed by the Landscape Perspective. How can landscape be connected to economic growth, contribute to a better cross-border water management and prevent some negative impacts of climate change like floods. How to achieve territorial cohesion without lowering diversity? How to foster cooperation in cross-border regions?

For example, the territorial dynamics “climate change mitigation and adaptation” raises several challenges such as the flood and water management, the maintenance and restoration of ecological network and a necessary energy transition. Several actions on the landscape can be undertaken in order to meet these challenges: reduce storm water runoff by changing land cover, restoring hedges, rewetting valley floors; preserve and enhance core areas and connect them through ecological corridors, develop biomass production (hedges, short rotation plantations, etc.). In Chapter 3 “Landscape perspective for the Three Countries Park”, these challenges are listed in relation to the four territorial dynamics and addressed by a series of spatial principles for landscape development.

2.2.3. Landscape demand and support from EU policy

Reacting on dynamics and challenges as outlined in the previous chapter, the European political context on the one hand - more or less intentionally - imposes demands and risks on landscapes and on the other hand gives support to regional and local policy which can be used for high-quality landscape development. Therefore, both political requirements to landscapes as well as potential instruments for regional cross-border landscape development have been investigated in the project. Figure 5 shows EU policy areas, selected for analysis in accordance with the themes of the development perspective of the 3LP (Projectgroep Drielandenpark, 2003) and the Fifth Cohesion Report (European Commission, 2010b), which are considered to have major impact on regional landscapes and significance for landscape policy.

EU POLICY AREAS:	Regional policy	Culture (incl. Cultural Heritage)	Agriculture & Rural Development	Transport	Environment > Urban	Environment > Habitats, Biodiversity	Environment > Water	Environment > Air, Waste, Noise, Soil	Energy	Climate	Enterprise & Industry
3LP - THEMES:	Regional Landscape Development (overall theme)	Cultural landscape and history	Agriculture	Urbanization and infrastructure		Nature (ecological structure, habitat, biodiversity)	Water and Environment		(not specifically adressed)	(not specifically adressed)	Tourism

Figure 5 Correspondence of EU policy areas with 3LP development themes *(Source: own elaboration)*

EU Regional/ cohesion policy as an investment policy is strongly devoted to the implementation of the Europe 2020 strategy, which gives overall policy orientation for all sectors by defining three priorities for political action: smart, sustainable, and inclusive growth (further discussed in Chapter 5). Economic growth however, usually places high demands on landscapes by an increasing appropriation of site and resources for production and consumption and associated societal development, e.g. housing. The Flagship Initiative for a Resource Efficient Europe is an attempt to decouple economic growth from increasing resource use and environmental degradation (European Commission, 2011a). It is thus of major importance for the development of non-commodified landscape values. Instruments mentioned in the Roadmap to a Resource Efficient Europe (European Commission, 2011k), e.g. green infrastructure, payments for environmental services, green public procurement, innovation partnerships, CAP measures, river basin management plans, soil sealing guidelines are considered in the policy recommendations for 3LP (Chapter 4). Coordination and integration of sector policies, which is another intention of the Flagship Initiative, is also important for landscapes since they basically accommodate all sectoral land uses and are shaped by all their needs and actions (see also Chapter 5). With the purpose to identify political requirements imposed on landscapes, policy objectives from significant documents in the abovementioned policy areas have been extracted and translated into 'landscape demands' based on landscape functions and services. Table 2 (page 24) shows on the one hand, that various conflicting, but also synergistic demands arise from political goals, which need to be managed in a balanced way by those responsible for regional & landscape policy. It shows on the other hand that many services, or service bundles, if supplied in the landscape, largely support European policy objectives. Key for a successful policy of (multifunctional) quality landscapes is therefore communication and integration over multiple disciplines, sectors, territorial units, levels and scales. This is highlighted in the Territorial Agenda 2020 as a necessary ingredient for territorial cohesion as well, along with a focus on evidence-based policy and a place based approach (TA 2020, 2011). (How landscape can facilitate place-based policy and territorial cohesion is further discussed in Chapter 5). Such an integrating capacity, however, is often lacking and to be regarded a bottleneck especially in a cross-border situation, where sectors and levels with their different languages, interests, organizational and legal structures of more than one country are to be brought together. This has also been experienced in the 3LP. Within cohesion policy the benefits of "integrated sustainable urban development" are explicitly recognized with financial resources dedicated to the city level (European Commission, 2011d). Integrated Territorial Investment (ITI), Community Led Local Development (CLLD) and the LEADER program for rural areas are further area-based tools specifically designed to support integrated local-regional actions (European Commission, 2011e, 2011c, 2011i, Art.42-45). However, no direct promotion of sustainable landscape development or dedicated tools for integrated landscape policies could be found. With regard to support by cohesion policy and structural funds, most relevant investment priorities under regional development are:

- *“Protecting, promoting and developing cultural heritage”*
- “*Protecting biodiversity, soil protection and promoting ecosystem services […] and green infrastructures” (European Commission, 2011h, Art.5 (6c-d))*

Most relevant investment priorities under rural development are:

- “*Restoring and preserving biodiversity […] and the state of European landscapes” (European Commission, 2011i, Art.5 (4a))*

Further investment priorities exploitable for implementing landscape policy relate to adaptation to climate change, strengthening links between agriculture/forestry and research/innovation, quality schemes & promotion of local markets, and renewable resources for the bio-economy. A more detailed list of investment priorities and measures suited for landscape development can be found in the Scientific Report, pp. 131-134. The thematic strategies for 3LP described in Chapter 4 explicitly refer to these priorities and associated measures.

Conclusion: European Union policy places high demands on landscapes, but no direct support for integrated landscape policy is provided. However, legal, financial and communicative instruments from different sources may be used. Those are mainly available in the fields of cohesion policy as well as sustainable resource management and biodiversity, but to a lesser extent for the management of cultural landscape values. Whether support from the structural funds can be used highly depends on which priorities (due to thematic concentration) are chosen by the national/regional and territorial cooperation programs. Market actors and their representing organizations as well as local communities and the public should be involved as key stakeholders, since much of EU support is dedicated to competitiveness and services of general interest.

Table 2 ***Landscape demands arising from European policy objectives in selected policy areas*** *(Column 1: references for policy documents see Scientific Report, pp.129; Column 4: landscape supply by landscape functions/ ecosystem services see classification in Table 1; Column 5: relevance of landscape demand and supply for territorial dynamics 1-4 as outlined in Chapter 2.2.2)*

Policies	Policy objectives	Landscape demand / supply		Dynamics
EU overall strategic policy orientation				
Europe 2020 Strategy (2010) / Flagship Initiative Resource Efficieny (2011)	To create growth & jobs in a smart, sustainable and inclusive way	Provide site, resources and conditions for economic and social development in a resource-efficient way	All functions and services	1,2,3,4
EU economic sector policies				
Industrial policy communication (2012)	(Growth and jobs as above) To strengthen industrial competitiveness, to support economic recovery and to enable the transition to a low-carbon and resource-efficient economy	Provide site for production and consumption (incl. housing)	Carrier	1,4
		Provide recreational opportunities for the regeneration of productive human skills and labour fource (human capital)	Cultural	1,3,4
		Provide non-renewable resources for production and consumption	Provisioning	1
Flagship Initiative Innovation Union (2011), Bioeconomy strategy (2012), Action Plan Eco-Innovation (2011)		Provide renewable resources for production and consumption (esp. bio-based economy)	Provisioning	
		Provide site for knowledge/ innovation centers, and opportunities for knowledge generation (esp. eco-innovation)	Carrier/ cultural	1,3
Green Paper on Trans-european Transportation Network (2009)	To provide the infrastructure needed for the internal market and for the objectives of growth and jobs to be achieved	Provide site and media for multi-modal transportation systems (TEN-T)	Carrier	1,4
Energy 2020 strategy (2010)/ climate & energy package (2007)	Competitiveness, security of supply, and sustainability (i.e. decarbonisation-efficiency-renewables 20-20-20-target)	Provide renewable energy sources and site for technical installations for their use	Carrier/ provisioning	1,2
		Provide corridors for energy network installations (TEN-E)	Carrier	
Renewable energy sources directive (2009)	RES BE 13%, DE 18%, NL 14% 10%- Transport fuel target	Increasing demand for biomass resources	Provisioning	
CAP 2020 communication (2010)	(1) Viable food production/ food security, (2) sustainable management of natural resources and climate action, (3) balanced territorial development	Provide high quality, diverse and safe food products	Provisioning	1
		Provide public goods (e.g. farmland biodiversity, resilience to disasters)	Regulating/ cultural	1,2,4
		Provide attractiveness & identity (in rural regions)	Cultural	1,3,4
Communication on a political framework for tourism (2010)	Keeping Europe the world's No1 tourist destination; support the tourism sector, promote its competitiveness, its sustainable and quality-based development	Provide recreational opportunities, landscape attractiveness, accessibility and views, natural and cultural heritage as resources for the tourism sector	Cultural/ regulating	3, 4
EU environmental sector policies				
Water framework directive (2000) / Groundwater directive (2006)	To achieve and maintain good status of all surface and groundwater bodies from 2015	Produce a good quality and provide for renewal of surface and groundwater throughout the whole watershed landscape	Regulating	2
Floods directive (2007)	To reduce adverse consequen-ces for human health, the environment, cultural heritage + economic activity from flood risk	Provide area-wide water retention throughout the watershed	Regulating	2
		Provide designated retention and flooding areas	Regulating	2

Thematic soil strategy & proposal for a soil protection directive (2006)	Preservation of the capacity of soil to perform environmental, economic, social and cultural soil functions	Provide and maintain high-quality soils in terms of fertility, water & nutrient retention capacity, carbon content, and soil biodiversity	Regulating	2
		Provide sites for raw material extraction and geological and archaeological heritage sites	Provisioning/ cultural	1,3
Biodiversity strategy (2010) / Habitats directive (1992) & Birds directive (2009)	Headline target: Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020	Provide a variety of typical natural ecosystems and habitats for listed species	Habitat	1,2,3,4
		Provide genetic diversity and ecosystem services	All	
Green infrastructure working paper (2011) and strategy (2013)	To enhance spatial and functional connectivity outside protected areas, to maintain and restore the capacity of ecosystems to deliver multiple ecosystem services	Provide landscape elements (e.g. hedges, tree groups, wetlands etc.) vital for ecosystem services and habitat quality (e.g. landscape permeability, reduced fragmentation)	All	
White paper climate change adaptation (2009)	To reduce the EU's vulnerability and to improve the EU's resilience to the impacts of climate change	Provide various ecosystem services in resilient ecosystems: e.g. moderation of extreme events, water retention/ flood protection, temperature buffering/ evaporative cooling, disease regulation etc.	Regulating/ habitat	2
Climate action: LULUCF decision proposal (2012)	To increase removals and to decrease emissions of GHG in land use related sectors	Provide carbon sinks in soils and standing biomass stocks	Regulating	2
		Maintain permanent grassland (no conversion to cropland)		
Air quality strategy (2005) and directive (2008)	To achieve levels of air quality that do not result in unacceptable impacts on, and risks to, human health and the environment [mainly relating to anthropogenic pollutants]	Avoid emissions of dust, particulate matter and further pollutants from land surfaces and land uses, provide permanent land cover, filtering & cooling vegetative surfaces	Regulating	2,3,4
Environmental noise directive (2002)	To avoid, prevent or reduce the harmful effects, due to the exposure to environmental noise [mainly relating to industrial and transport sector]	No requirement, but positive contribution of landscapes: Provide noise buffering, quiet open areas and agreeable soundscapes for relaxation from environmental noise	Regulating/ cultural	3,4
Urban waste water treatment directive (1991)/ Sewage sludge directive (1986, presently under revision)	To protect the environment from the adverse effects of urban and certain industrial waste water discharges; Target of secondary treatment; To prevent harmful effects on soil, vegetation, animals, and men	Metabolize effluent from sewage treatment plants in recipient waters	Regulating	1,4
		Provide alternative, eventually land based, waste water treatment in agglomerations of < 2000 person equivalents; Metabolize treated sewage sludge on agricultural soils	Regulating	
EU socio-cultural sector policies				
Social policy TFEU Art. 151 (2010)	Among others: Improvement of living conditions and combating of exclusion	Provide public open space and community space for social cohesion and inclusion	Cultural	3,4
Culture TFEU Art.167 (2010)	Improvement of the knowledge and dissemination of the culture and history of the European peoples; conservation and safeguarding of cultural heritage of European significance	Maintain characteristic cultural and historic landscape features contributing to local-regional and European identity	Cultural	3,4

2.2.4. The "cross-border polycentric" case: regions with similarities to 3LP

The different components of the landscape policy are to be compared to other regions in Europe with a twofold purpose. First, learn from good practices and successful measures in terms of landscape management and see how transferable they are. That implies that the comparison must be carried on regions that acknowledge the value of their landscape and have initiated actions in order to manage it. Second, comparison allows the 3LP to find potential cooperation, useful for landscape policy implementation and funding. In order to improve the usefulness of previous ESPON results, the first step is to use other cross border polycentric metropolitan regions (CBPMR) as a base, in line with the ESPON METROBORDER (2011) and ESPON 1.4.3 (2007) projects. Further details can be found in the Scientific Report (Chapter II.4).

Table 3 Similarity of CBPMRs with the 3LP according to identified European dynamics (+ = weak, ++ = medium, +++ = strong) *(Source: own elaboration)*

Name of CBPMR	Dynamic 1: Intensification of land use and economic diversification	Dynamic 2: Climate change mitigation and adaptation	Dynamic 3: Demographic change and territorial attractiveness	Dynamic 4: Suburbanization and polycentric development
Katowice-Ostrava (PL-CZ)	+++	++	++	+++
Wien – Bratislava metropolitan area (AT-SK-HU)	+++	+++	+++	+++
Lille transborder metropolitan area (FR-BE)	+++	++	++	+++
Copenhagen-Malmo (DK-SE)	++	++	+++	+
Nice-Monaco-San Remo (FR-IT-MC)	++	+++	++	+
Saarbrücken – Forbach (DE-FR)	+++	+++	++	+++
Luxembourg metropolitan area (LU-DE-FR-BE)	+++	++	+++	+++
Basel (CH-FR-DE)	++	+++	+++	+
Strasbourg (DE-FR)	++	+++	+++	+
Genève (CH-FR)	+	++	+++	+

Within the 10 CBPMRs, 5 are experiencing similar territorial dynamics (i.e facing similar challenges to the 3LP): Wien-Bratislava (AT-SK-HU), Lille metropolitan area (FR-BE), Katowice-Ostrava (PL-CZ) and, forming the Greater Region, Saarbrücken – Forbach (DE-FR) and Luxembourg metropolitan area (LU-DE-FR-BE). Except for Katowice-Ostrava, each show initiatives of cross border cooperation and landscape is mobilized more or less intensively as a lever of development. In the Wien-Bratislava region, a protected green open area between the two cities is used to decelerate urban sprawl while playing the role of link between the two cities. Lille metropolitan area, with the Deûle Park is in the same logic: the preserved area is the green lung of the city while connecting it to the mining basin conurbation. The Hainaut Cross Border Natural Park, embedded in the

same polycentric system than Lille, aims at playing the same role but does not include the towns located in its circumference. The Greater Region shows an example of cross border collaboration through the implementation of the European Grouping of Territorial Cooperation Sarre-Moselle. Even if landscape is not specifically tackled in the strategy, it is integrated in some projects and plays a transversal role in terms of territorial marketing.

In addition, two polycentric (but non-cross border) cases that deal with an open rural area have been added: the Upper Veluwe (NL) and Central Tuscany Natural Park (IT). In the first case, the park functions as an isolate rejecting the urban structures on its periphery. This break occurs both institutionally and functionally. In the second case, the central rural area is used as a tool for the conservation of the (historical) polycentric structure of Central Tuscany by restoring the historical landscape, promoting peri-urban agriculture, and by developing tourism and local food-processing.

These cross-border examples, through the strategies that they have implemented, show that their main concern is mostly to deal with dynamic 1 (Intensification of land use and economic diversification) and dynamic 4 (Suburbanization and polycentric development). Indeed, these territories focus on the right balance between urban and rural relationships, by decelerating the urban sprawl which is seen as the main threat for the territorial identity and inhabitants' quality of life. The issue is tackled through protection of open areas (Wien-Bratislava, Lille, Upper Veluwe) or by initiating or supporting economic and leisure activities in accordance with the rural profile of the region while at the same time considering landscape as an element of the dynamics 1 and 4 (Central Tuscany and the Greater Region).

2.2.5. Conclusion: Cross-border landscapes reflecting the European challenge of unity and diversity

The previous chapters have explained the chances for more coherent landscape policy in cross-border areas: via reference to the ELC and via the application of unifying concepts such as 'ecosystem services' or 'landscape quality objectives'. Then, shifting to the example of the 3LP, the area's shared history was highlighted as a special feature of European significance with a strong influence on the regional landscape and its common values. In contrast, 3LP's cultural diversity, but also its division by borders, seem typical for a cross-border area. It was further investigated how the area is facing challenges like e.g. land use intensification or suburbanization, derived from territorial dynamics that exist across Europe. In this relation it was explained at depth, how such issues are reflected also in EU policy: It places strong demands on landscapes, shows low commitment for explicitly landscape-driven approaches, while it offers a variety of support instruments from different sources. Finally, it was investigated how other CBPMR have been tackling such issues: Three among ten CBPMR show a relatively high amount of parallels with the 3LP, including the application of landscape as an integrative concept.

Concluding in relation to EU policy development, a not yet fully developed potential of three dimensions of landscape for territorial development can be hypothesized, which serve as a starting point for policy recommendations on European level in Chapter 5:

1. **Landscape as asset:** The analysis of unifying concepts like LQO and ecosystem services shows that the landscape and its features can be considered an asset, which

enable value-creation and smart, sustainable, and inclusive growth as prioritized in the Europe 2020 strategy (European Commission, 2010a).

2. **Landscape as place:** The analysis of the landscape category itself as well as the EU policy context hints to an important role the distinctiveness and inclusiveness of landscape may play for a place-based policy approach, as promoted by the Territorial Agenda (TA 2020, 2011).
3. **Landscape as common ground:** In addition the analysis of European dynamics and challenges as well as other cross-border regions suggests that landscape as a common ground, on which trends and actions take place, may facilitate territorial cohesion, as it is an overall aim since the Lisbon Treaty (TEU, 2010).

How can such findings become addressed by the 3LP and other CBPMR, representing regions that can become innovative testing grounds for landscape-driven cross-border development that is aligned with EU policy development? How can such CBPMR strengthen cohesion by working on shared problems, while simultaneously enhancing diversity with place based approaches?

An answer seems at first glance difficult, since the planning systems and their interests usually diverge from each other at each side of the border. In the example of the 3LP, the Netherlands and Germany have formal landscape planning tools (e.g. *Landschaftspläne* DE and, in a less binding way the *Landschapsplannen* NL), while Belgium has basically nothing comparable (Schröder *et al;* Antrop and Sevenant, 2010). Belgium and Netherlands have signed the ELC, while Germany has not. Regarding spatial planning systems, larger differences exist basically among all three countries (Royal Haskoning, 2007).

Workshops of the LP3LP project partially reflected this set up, while fortunately showing valuable chances to learn from each other via continuing with 'informal', project-based, approaches that make use of existing organizations and their expertise. Such stakeholder initiatives were in focus during the LP3LP analysis of regional policies, which could investigate a variety of cross-border initiatives. Usually projects exist several years with a certain thematic focus partially under the umbrella of the 3LP. For example *Aquadra (2009-2013)*, an Interreg IV supported project, conducted water basin management and habitat development across three borders, including place-based implementation measures like e.g, retention areas or stream 're-naturalizations' (Figure 9, p. 31, for a full list of the initiatives analysed, see Scientific Report, Chapter IV.1.4). Such initiatives often build up communicative and cooperative channels across boundaries. If further continued and connected within a broader landscape vision they bear the chance to steadily integrate territorial units, such as city-networks and landscape areas, river basin districts, administrative units (Figure 6-8).

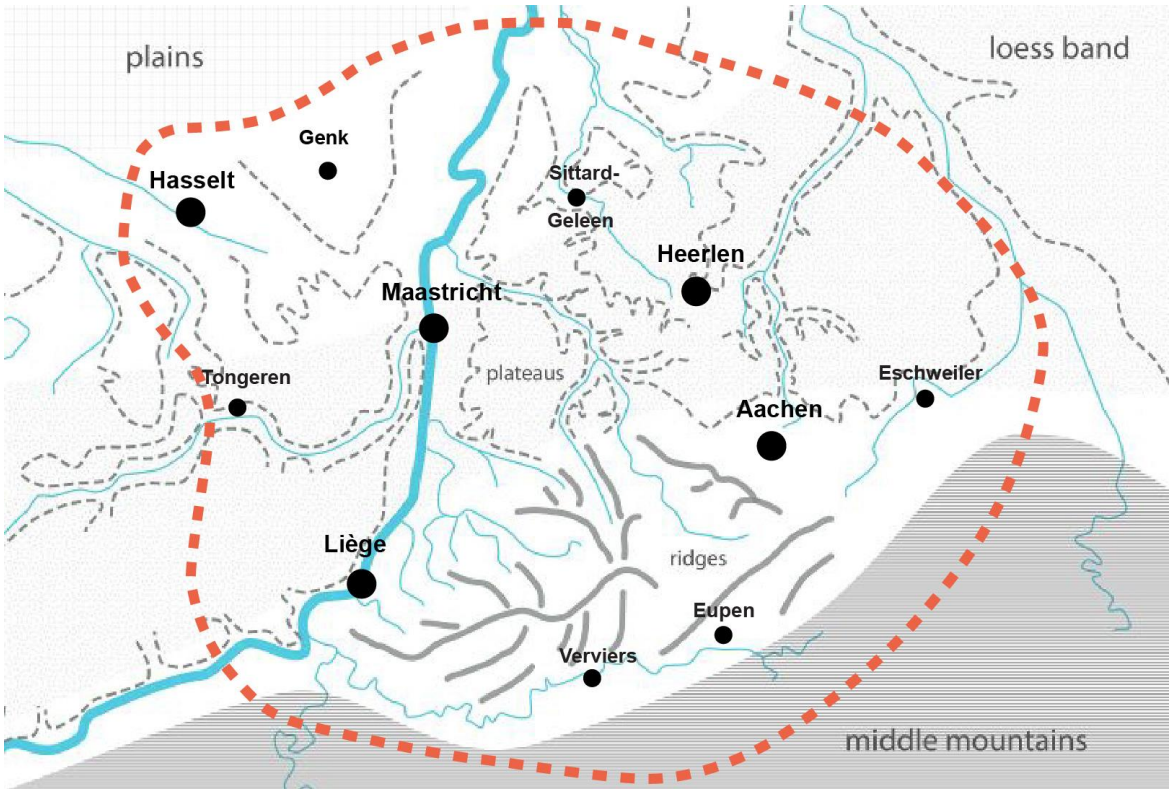


Figure 6 ***The 3LP (red dashed line) in its local geomorphological context, showing e.g. major water courses, the transition from middle mountains to plains, and the European loess band (hatch)*** *(Source: own elaboration)*

Figure 7 ***The 3LP and sub-basins of the Meuse River*** *(redrawn from various sources)*

Figure 8 ***The 3LP, its regional governments (different colors) and municipalities (thin lines)*** *(redrawn from www. godehardhoffmann.mynetcologne.de)*

Concluding for the investigated example of the 3LP, more broadly understood also for other CBPMR, the following directions for cross-border landscape policy development seem meaningful:

1. **Enable critical mass for synthesis:** A 'light' platform (like the 3LP) under the leadership of one among the national-regional governments, that coordinates actions seems an efficient way forward. However, when intensification of cross-border activities is the goal, it needs to be assured that there is enough critical mass for synthesis (e.g. for finding consensus regarding common goals, for coordinating an increasing amount of project groups and their cross-border communities – or simply for making sure that crucial information becomes available at the beginning of projects, for example regarding geographic information data). This point is especially addressed by the partnership proposal in Chapter 4.2.)
2. **Consider approaches via inclusion of market actors:** Since the landscape is largely under the influence of economic land uses und much EU support is dedicated to economic players, the innovative integration of market actors such as from forestry or agriculture seems crucial, especially if e.g. targeting climate change mitigation and adaptation or e.g. meeting water quality objectives by the Water Framework Directive with payments for ecosystem services (PES). Considering such ideas, the thematic strategies presented in Chapter 4.3 can innovatively extend the 3LP approach beyond its existing thematic focus.
3. **Make use of existing core competences and interests**: In the case of the 3LP, this means focusing on "reality-proven" themes such as habitat development and biodiversity, the provision of access, cultural heritage and their synchronization with established planning systems. This meets available support by territorial cooperation programs and/or EU funds or new ones like e.g. related to the EU's Green Infrastructure strategy. However, 'landscape' should be placed more prominently into the center. This point is especially reflected by the landscape perspective, as described in the next chapter (Chapter 3).

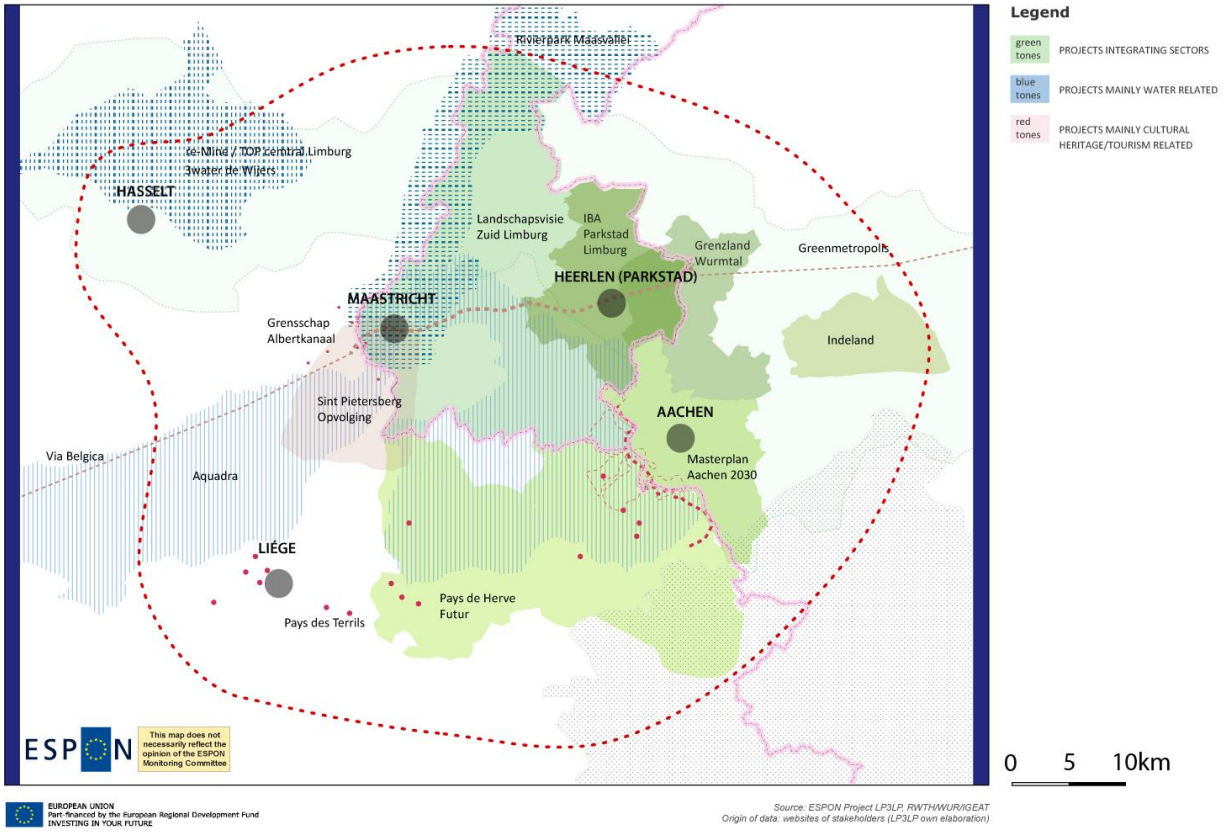


Figure 9 The 3LP (shown in red outline) and the territories of exemplary regional policy initiatives within the 3LP. (*Sources: websites of the stakeholder projects)*

3. A landscape perspective for the Three Countries Park

3.1. Introduction to the landscape perspective

The unique quality and value of the landscape of the Three Countries Park had already been formally recognized in the first cross border spatial development perspective for the region: the 1992 MHAL perspective (Taken Landschapsplanning, 1992). A decade later, in 2003, a development perspective was drawn-up for the Three Countries Park, formulating 26 lines of ambition (Projectgroep Drielandenpark, 2003). Since 2003 several landscape studies have followed, focused on various parts of the Three Countries Park. Together these cover almost the entire 3LP area (Figure 10). Up until now an overall landscape perspective has been missing, one which crosses the national borders and overarches the differing approaches. This is where the landscape perspective for the Three Countries Park ties in.

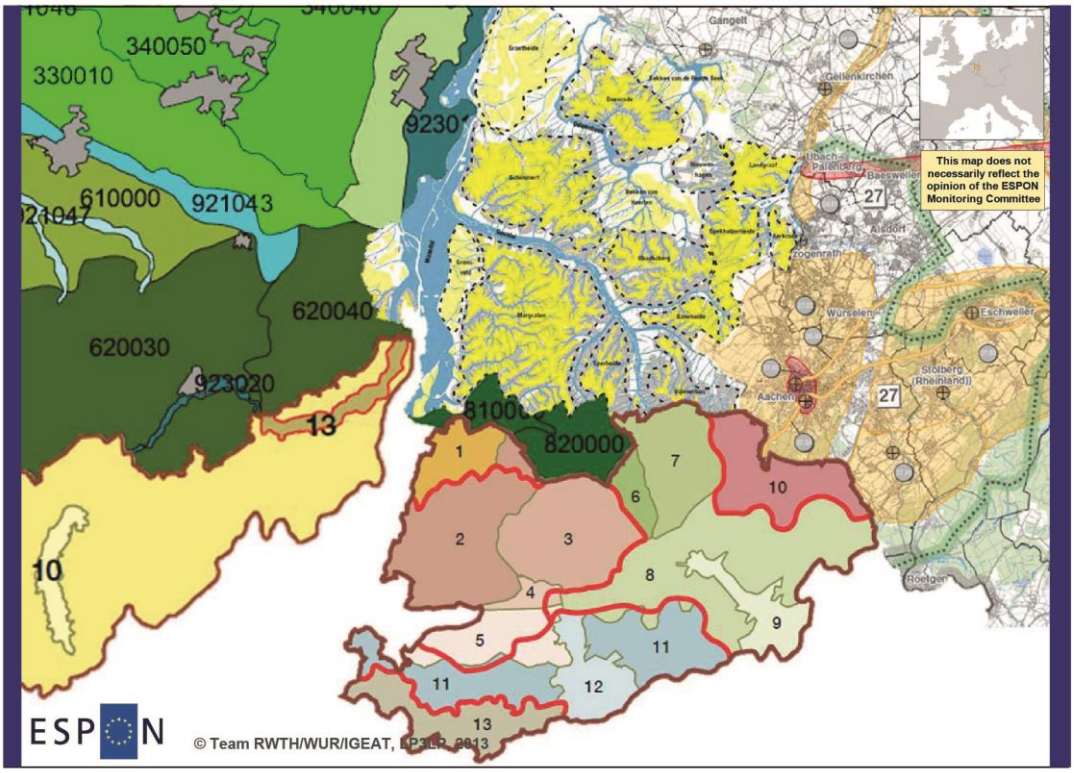


Figure 10 Montage of maps from previous landscape studies *(Antrop et al., 2002; Cremasco et al., 2008; Kerkstra et al., 2007; Landschaftsverband Westfalen-Lippe and Landschaftsverband Rheinland, 2007; Witte et al., 2009)*

In the previous chapter territorial dynamics related to 'Intensification of land use and economic diversification', 'Climate change mitigation and adaptation', 'Demographic change and territorial attractiveness' and 'Suburbanization and polycentric development' are described. Undoubtedly, these dynamics influence the future development of the 3LP landscape, as dynamics and changes have done in the past. Related to these dynamics a range of challenges for the 3LP landscape have been discussed with a group of

stakeholders in the third workshop held during the LP3LP project. The following main challenges for the 3LP landscape were identified:

- Agricultural developments (related to the dynamics of 'Intensification of land use and economic diversification')
- Development of a cross-border ecological network (related to the dynamics of 'Climate change mitigation and adaptation')
- Cross-border water management, both quantitative and qualitative (related to the dynamics of 'Climate change mitigation and adaptation')
- Energy transition (related to the dynamics of 'Climate change mitigation and adaptation')
- Management of an attractive, diverse and historic rich landscape (related to the dynamics of 'Demographic change and territorial attractiveness')
- Cross-border recreational and tourist network, attractions and amenities (related to the dynamics of 'Demographic change and territorial attractiveness' and 'Intensification of land use and economic diversification')
- Urbanization processes (related to the dynamics of 'Suburbanization and polycentric development')

The landscape perspective is a structured plan to preserve, enhance and develop the qualities of the 3LP landscape. It aims to guide the changes and decisions, related to the challenges mentioned above, that affect the future physical form and function of the landscape. Although the Landscape Perspective is made for the cross-border landscape of the Three Countries Park, the set-up and structure of this landscape perspective can also be used for other regional – cross-border – landscapes. The landscape perspective came about through an iterative working process which entailed desk studies in the form of a literature review, an extensive map study and designing, as well as fieldwork such as site visits and visual assessment. In addition, local and regional stakeholders participated through three workshops and individual opportunity for feedback.

3.2. The landscape of the Three Countries Park

The 3LP landscape slopes from its highest points in the South East to its lowest points in the North West and is criss-crossed by rivers and streams. In the Pleistocene a band of Loess, at some places 10 meter thick, was deposited running from the South West (*Haspengouw*) to the North East (*Jülicher Börde*) of the 3LP area. The Meuse and its tributaries moulded the landscape into a hilly terrain (Kerkstra *et al.*, 2007). This geomorphological structure of the 3LP is visualised in Figure 6 (p. 29). In addition to the middle mountains and the plains, two distinct types of relief evolved, plateaus with a-symmetric river valleys and a ridge landscape in the southern part of the 3LP area (Figure 12). The rich and continuous history of occupation of the area has added substantial flavour to the landscape which has been inhabited since 4500 BC (see Chapter 2.2.1 and Scientific Report, Chapter II.3.2). Many relicts of cultural heritage

remain in the landscape and the cultural landscape itself reflects the rich history of the region.

The development and occupation of this hilly landscape resulted in a polycentric urban structure surrounding an attractive green cultural landscape. Nowadays this attractive landscape not only has an agricultural function, but is also enjoyed by tourists, used for outdoor recreation, and attracts urban dwellers to live in the countryside (Projectgroep Drielandenpark, 2003). Based on the characteristics of the landscape - the differences in relief, the scale of the landscape and the differences in land use (arable lands, pastures, housing, etc.) - a map has been made for the region identifying seven different landscape types. Figure 11 (below) shows the landscape types and Table 4 (next page) describes their characteristics.

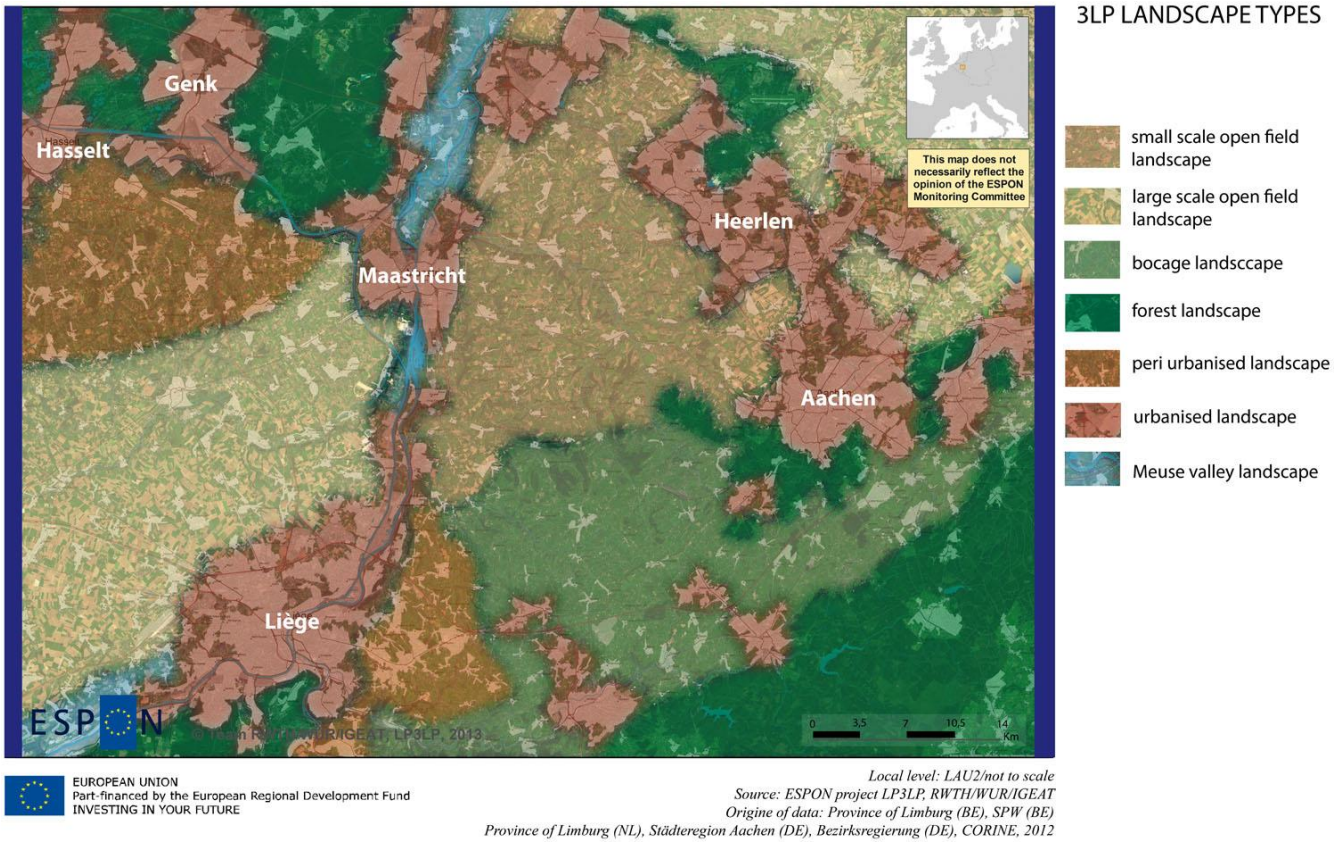


Figure 11 Landscape types of the Three Countries Park *(Source: own elaboration)*

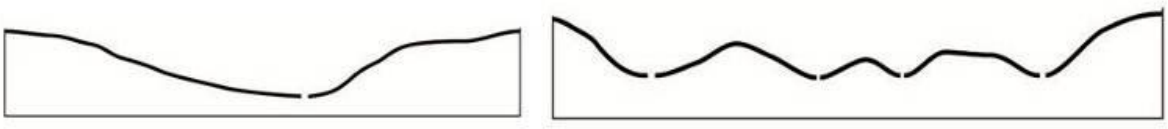


Figure 12 Schematic cross-section of the plateau landscape (left) and the ridge landscape (right) *(Source: own elaboration)*

Table 4 Characteristics of the landscape types of the Three Countries Park *(Source: own elaboration)*

Small-scale open field landscape	• Loess plateau with relatively many streams and dry valleys criss-crossing • Open arable land on the plateau with broad views over the surroundings • Green, a-symmetrical valleys, gentle slopes used as pastures/meadows, steep slopes with forest or as pasture land with strip lynchets • (Standard) orchards • Villages in valleys and on plateaus • Castles, estates, monasteries, historic farms
Bocage landscape	• Hilly pasture landscape with many hedge remnants • A-symmetric valleys with gentle slopes as well as steep forested slopes. • Villages and scattered farms • Castles, estates, monasteries, historic farms
Meuse valley landscape	• River landscape bounded by slopes • Excavation areas (gravel and sand) • River-related infrastructure (harbours) • Villages • Arable lands, pastures, standard orchards
Large-scale open field landscape	• Loess plateau with gentle slopes and a few streams criss-crossing • Villages and scattered farms • (Standard) orchards • Large scale agriculture, arable lands • Castles, estates, monasteries, historic farms
Forest landscape	• Hilly forest landscape
Urbanised landscape	• Historic city centres with manifold cultural heritage • 20th century urbanised areas • Industrial sites • Industrial heritage • Urban green • Pockets of historic agricultural landscape
Peri-urbanised landscape	• 20th century suburbanisation interwoven with a small scale open field landscape or bocage landscape

3.3. Five core qualities of the Three Countries Park landscape

Based on interviews with stakeholders, discussion in workshop-sessions, a map-analysis, the characteristics of the landscape types and the identification of valuable landscape assets in previous landscape studies (Antrop *et al.*, 2002; Cremasco *et al.*, 2008; Kerkstra *et al.*, 2007; Landschaftsverband Westfalen-Lippe and Landschaftsverband Rheinland, 2007; Witte *et al.*, 2009), five core qualities of the Three Countries Park landscape were derived. Below, these five core qualities are introduced including a short description of the appearance of the core qualities in the landscape types of the 3LP region. In the Scientific Report, Chapter III.1, these 5 core qualities are illustrated and an overview is given of their appearance in the landscape types of the Three Countries Park.

The diversified relief – caused by the position of the region between the plains and the middle mountains, and the criss-crossing water courses – is one of the dominant features of the Three Countries Park landscape.

The abundance of water appearances is the second core quality. These appearances relate to the various streams, rivers, creeks, springs, ponds, artificial lakes, castles with wet moats etc.

A varied green character is the third quality, based on the forested steep slopes, marshlands, the half-natural grasslands - especially the lime based grasslands – hedges, standard orchards, wooded hollow roads, and strip lynchets. This varied green character together with caves, mines, quarries, and reserved fragments of arable lands, provides habitats for many animals.

The polycentric settlement pattern is the fourth quality. The polycentric urban structure, as well as the positioning of the urbanised areas around a green core, ensures the proximity of attractive urban and rural areas throughout the landscape.

Finally, manifold cultural heritage is the fifth core quality, reflecting the rich history of the region that resulted in a cultural landscape which still looks almost medieval, with castles, estates, monasteries, convents, farms and villages, as well as more recent heritage like mining colonies and industrial heritage sites.

Landscapes though, are not static. They develop and change over time due to changing circumstances, developments in land-use and other territorial dynamics. Many changes devalue the existing landscape qualities when they occur at an unsuitable place or in an unsuitable form. On the one hand, these developments seem to ignore the landscape. On the other hand, chances for landscape enhancement are missed because they are not known. A shared and overarching landscape perspective helps to guide smaller-scale decisions about the spatial arrangement of land-use in such a way that they will fit the landscape, as well as show needs and opportunities for active landscape development in order to preserve, enhance and develop the core qualities of the landscape.

3.4. Unity and diversity, a landscape perspective for the Three Countries Park

The landscape perspective provides direction for an attractive, diverse and history-rich landscape in the future. In the previous chapter several territorial dynamics and challenges to regional landscapes were presented. It showed that the Three Countries Park landscape is also subject to change. The landscape perspective not only enhances the characteristics and core qualities of the landscape, but also improves its ecosystem services and will make the landscape more robust and resilient to future change.

The landscape perspective builds upon the main principles of unity *and* diversity. On the one hand a shared perspective is given on preservation, development and cultivation of the core qualities of the 3LP landscape: diversified relief, water appearances, green character, polycentric settlement pattern and cultural heritage. On the other hand it provides opportunities to respect different identities, to reflect cultural differences and to enable specific place-based solutions.

The aim of ***unity*** is represented by a shared, cross-border set of objectives, derived from previous landscape studies of the different parts of the 3LP region (an overview of these objectives can be found in the Scientific Report, Chapter III.2). Many of the objectives in these studies relate to the preservation, development and cultivation of the core qualities of the 3LP landscape. A critical review revealed that many similarities exist in content, but that the objectives differ in levels of scale and abstraction. The landscape perspective

bridges this gap by synchronizing landscape objectives and objectives related to a cross-border ecological network, creating a shared set of objectives on a joint level of scale and abstraction. The aim of unity raises an urgent need for, and places heavy demands on, a unifying landscape-based framework that creates and reinforces landscape structures across borders and throughout the landscape.

The aim of ***diversity*** relates to both the policy context of objectives and location-specific solutions. It is especially relevant to the elaboration of shared objectives on a smaller scale. The workshops with stakeholders showed that cross-border cooperation has led to a shared perspective on the quality and future development of the 3LP area - laid out in the 3LP Development Perspective (2003) - but that many differences exist too. National policies and regional cultural differences cause variations in interpretations and elaborations of identical objectives. Rather than considering this as a problem in cross-border cooperation it must be seen as a potentially valuable and respected contribution to the spatial and cultural richness of the Three Countries Park. The workshops also made clear that specific issues and detailed landscape characteristics arose when looking at the local scale. Local and regional knowledge is needed to develop and implement landscape quality objectives and guiding principles into meaningful, acceptable concrete measures at a local scale.

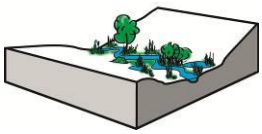
In order to meet the two aims, the landscape perspective is defined on a regional scale, providing opportunities for detailed, tailor-made and culturally-embedded local solutions in landscape planning & design, protection and management. The landscape perspective consists of the following elements:

- Guiding principles: General spatial principles for landscape development, based on shared objectives for preservation, development and cultivation of the core qualities
- Present structures: landscape structure and cultural identities. Important components of the region's identity and physical elements, defining which guiding principles can be applied where, and how.
- Future structures: the green-blue framework and the urban-open space framework show what structures will emerge on a regional scale by applying the guiding principles. The green-blue framework will provide a backbone in the landscape; the urban-open space framework supports this by ensuring space for the green/blue framework and improving the accessibility of the landscape for recreation and tourism.

Local examples illustrate how the guiding principles can lead to place-based solutions on a detailed scale, taking cultural identities and landscape specifics into account. The landscape structure, cultural identities, and the green-blue and urban open-space frameworks were drawn-up on an overarching 1:100.000 scale covering the entire Three Countries Park region. The local examples were drawn up on a 1: 20.000 scale, showing a more detailed view of the possible elaboration of the guiding principles.

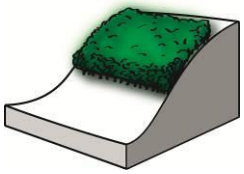
3.4.1. Guiding principles

The guiding principles are general spatial principles for landscape development in the Three Countries Park. They contribute to conserving and enhancing the ecological, hydrological, productive, experiential, and recreational values in the landscape, and explain *what* must be done in order to create a robust and resilient landscape at the regional scale. Guiding principles 1-8 focus on landscape structuring elements, ecosystems and water systems, principles 9-13 on urban areas and open space. The guiding principles for the Three Countries Park are:



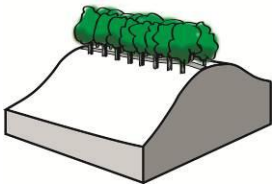
1. Wet valley floors

Through wetting valley floors the contrast of the valleys in the landscape with the surrounding slopes, plateaus and ridges is emphasised. Furthermore, this guiding principle adds to the creation of habitat, mitigates of flood risk, regulates local climate, improves water quality and could produce biomass for energy production. This principle will strengthen the robust landscape structures in the region, especially the spatial continuity of the valleys.



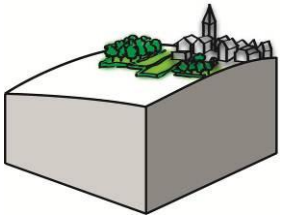
2. Forest on steep slopes

By foresting the steep slopes any contrast with valleys, gentle slopes, plateaus and ridges increases, and existing forests on steep slopes will be supplemented. Besides production of wood this guiding principle adds to the prevention of soil erosion, mitigates flood risk, regulates local climate, improves water quality, creates habitats and ecological connections, and improves the recreational potential of the landscape. An important point to consider with this guiding principle is that valuable limestone grasslands can occur on steep slopes. Foresting of these grasslands is not desirable. Furthermore, the forest should not block all views from the plateaus and the ridges. This principle will add and enhance robust landscape structures in the region.



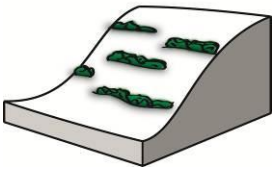
3. Emphasise high ridges

This guiding principle adds to the enhancement of the landscape structure in the bocage landscape. It underlines the ridges in this landscape with linear tree-planting. The planting will also create small-scale ecological connections. The view from the ridges on the surrounding landscape should not be blocked; it is an important feature to keep in mind with this guiding principle.



4. Green village fringes

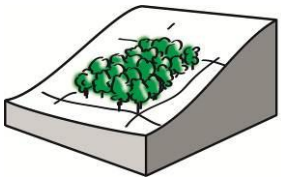
The plateau villages will be surrounded with green fringes, consisting of small paddocks and standard orchards which reflect their historic situation. It will enhance the cultural landscape, improve scenic views on the village edges, and create small scale ecological connections, provide space for the production of regional products (e.g. fruits) and biomass, mark the separation between villages and will improve local recreational possibilities.



5. Restore strip lynchets

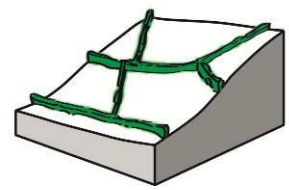
Strip lynchets are a characteristic landscape element for parts of the region. Restoration of strip lynchets enhances the cultural landscape, prevent soil erosion, mitigate flood risk, improve water quality, produce biomass and create small-scale ecological connections.

6. (Re-)develop standard orchards



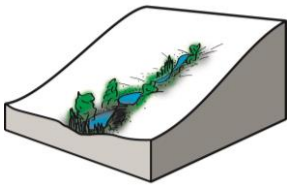
Standard orchards were at one time a common thing in the region, which is known for its fruit production. (Re-)development of standard orchards will enhance the cultural landscape, produce regional products, create small-scale ecological connections, mitigate flood risk and produce biomass. (Re-)development of standard orchards should preferably commence near (historic) buildings and villages.

7. (Re-)develop hedge structures



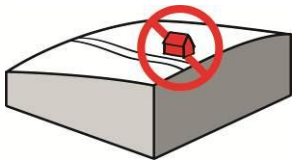
The hedge landscape emerged through generations of traditional land management practices, especially on the gentle slopes used for cattle-grazing. (Re-)development of these hedge structures will enhance the cultural landscape immensely. It will also create small-scale ecological connection, produce biomass, mitigate flood risk and improve water quality. An extensive network of hedges can be a valuable and robust regional landscape structure.

8. Restore springs and sources



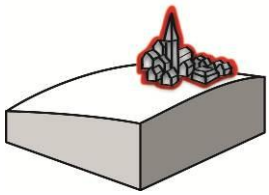
The region contains many springs and sources, some of which have been channelled. When these springs and sources are restored and planted, they will add to the creation of habitats, mitigate flood risk, prevent soil erosion, regulate the local climate and improve water quality.

9. Restricted building



This guiding principle relates to large parts of the rural areas in the regions - the valleys, plateaus, ridges and slopes. This guiding principle aims to stop urban sprawl, ensure separation between urban areas, preserve and enhance the landscape structure, and preserve migration routes and ecological connections. No building should occur on valley floors, steep slopes, on ridges and on the highest areas on the plateaus. Restricted building with a strong eye for landscape-fitted development such as in the depressions on the plateaus and on the lower parts of the gentle slopes.

10. Building fitting in village structure and silhouette

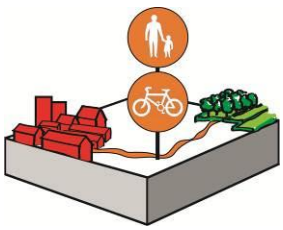


Some of the village structures and silhouettes in the region are quite characteristic and unique. New buildings should fit the existing structure and silhouette of a village. This guiding principle will limit urban sprawl and preserve and enhance the landscape structure and cultural landscape.

11. Landscape-based restructuring of built-up areas

Both urban and suburbanised areas can come up for renewal and restructuring. This should be done based on the existing structure of the landscape. It implies careful consideration of where to build and where to remove building, especially where spatial continuity of the valleys is concerned. Buildings on valley floors, steep slopes and ridges should be avoided. This guiding principle will enhance the living environment and the landscape experience, create space for habitats and ecological connections and mitigate flood risk.

12. Urban-open space accessibility for slow traffic



In several parts of the urban areas it is hard to get into the countryside by bike or walking, although it is just a few kilometres away. This guiding principle aims to improve

the access to and from the rural areas for walkers and cyclists. It will improve the recreation and tourism infrastructure and enhance the landscape experience.

13. Improved access to heritage and nature sites for slow traffic

Some of the more special places in the landscape often related to cultural heritage or nature, like valley floors, are hard to access and experience for walkers and cyclists. Improving this access to specific beautiful sites will improve the recreation and tourism infrastructure in the region and enhance the experience of the landscape.

All guiding principles relate to the core qualities and preserve or enhance them. The following table shows which guiding principle preserves or enhances which core quality.

Table 5 guiding principles and core qualities *(Source: own elaboration)*

Guiding principle	Core qualities				
	Diversified relief	Abundance of water appearances	Varied green character	Manifold cultural heritage	Polycentric settlement pattern
1. Wet valley floors	■	■	■		
2. Forest on steep slopes	■		■		
3. Emphasise high ridges	■		■		
4. Green village fringes			■	■	■
5. Restore strip lynchets	■		■	■	
6. (Re-)develop standard orchards			■	■	
7. (Re-)develop hedge structures			■	■	
8. Restore springs and sources		■	■		
9. Restricted building	■		■		■
10. Building fitting in village structure and silhouette				■	■
11. Landscape-based restructuring of built-up areas	■	■			■
12. Urban-open space accessibility for slow traffic			■		■
13. Improved access to heritage and nature sites for slow traffic				■	■

The guiding principles make the landscape more resilient and each provides services from one or more categories of ecosystem/ or landscape services (Scientific Report, Chapter III.3 gives an elaborated overview of the relation between the guiding principles and landscape services):

- provisioning services: obtaining products from ecosystems such as food, fibres, fuel, genetic resources, biochemicals, and fresh water;
- regulating services: benefit from the results of ecosystem processes such as water purification and regulation, air quality regulation, climate regulation, erosion regulation, pollination, natural hazard regulation;
- cultural services: gain non-material benefits from our interaction with the natural environment such as cognitive development, reflection, recreation and aesthetic experiences;
- supporting services: necessary for the production of all other ecosystem services including soil formation, photosynthesis, primary production, nutrient cycling and water cycling.

The landscape perspective aims to guide changes and decisions related to the identified challenges for the 3LP landscape (see Chapter 3.1). Table 6 shows the relevance of the guiding principles for these challenges.

Table 6 guiding principles and challenges

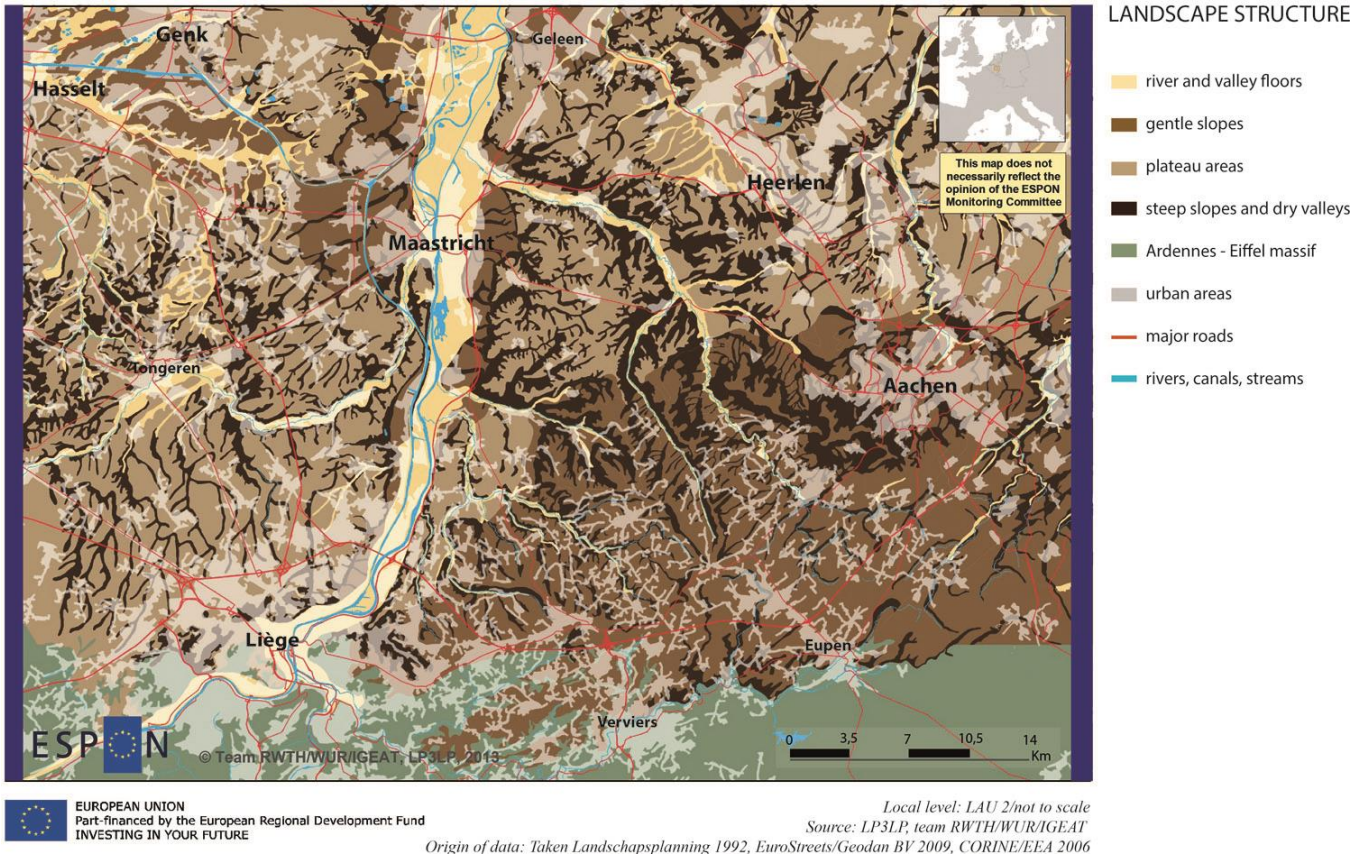
Guiding principle	Agricultural development	Cross-border ecological network	Water management	Energy transition	Attractive, historic rich and diverse landscape	Cross-border recreational and tourist network	Urbanization processes
1. Wet valley floors		**X**	**X**	?	**X**	?	
2. Forest on steep slopes		**X**	X	X	**X**		
3. Emphasise high ridges		X	X		**X**	?	
4. Green village fringes	?	X	X	?	**X**	?	
5. Restore strip lynchets	X	X	X	X	**X**		
6. (Re-)develop standard orchards	X	X	X		**X**		
7. (Re-)develop hedge structures	X	X	X	X	**X**		
8. Restore springs and sources	X	**X**	**X**		**X**	?	
9. Restricted building		X		X	**X**	?	**X**
10. Building fitting in village structure and silhouette					**X**		**X**
11. Landscape-based restructuring of built-up areas		X	X		**X**		**X**
12. Urban-open space accessibility for slow traffic	?					**X**	
13. Improved access to heritage and nature sites for slow traffic	?					**X**	

X = major relevance
X = minor relevance
? = possible relevance

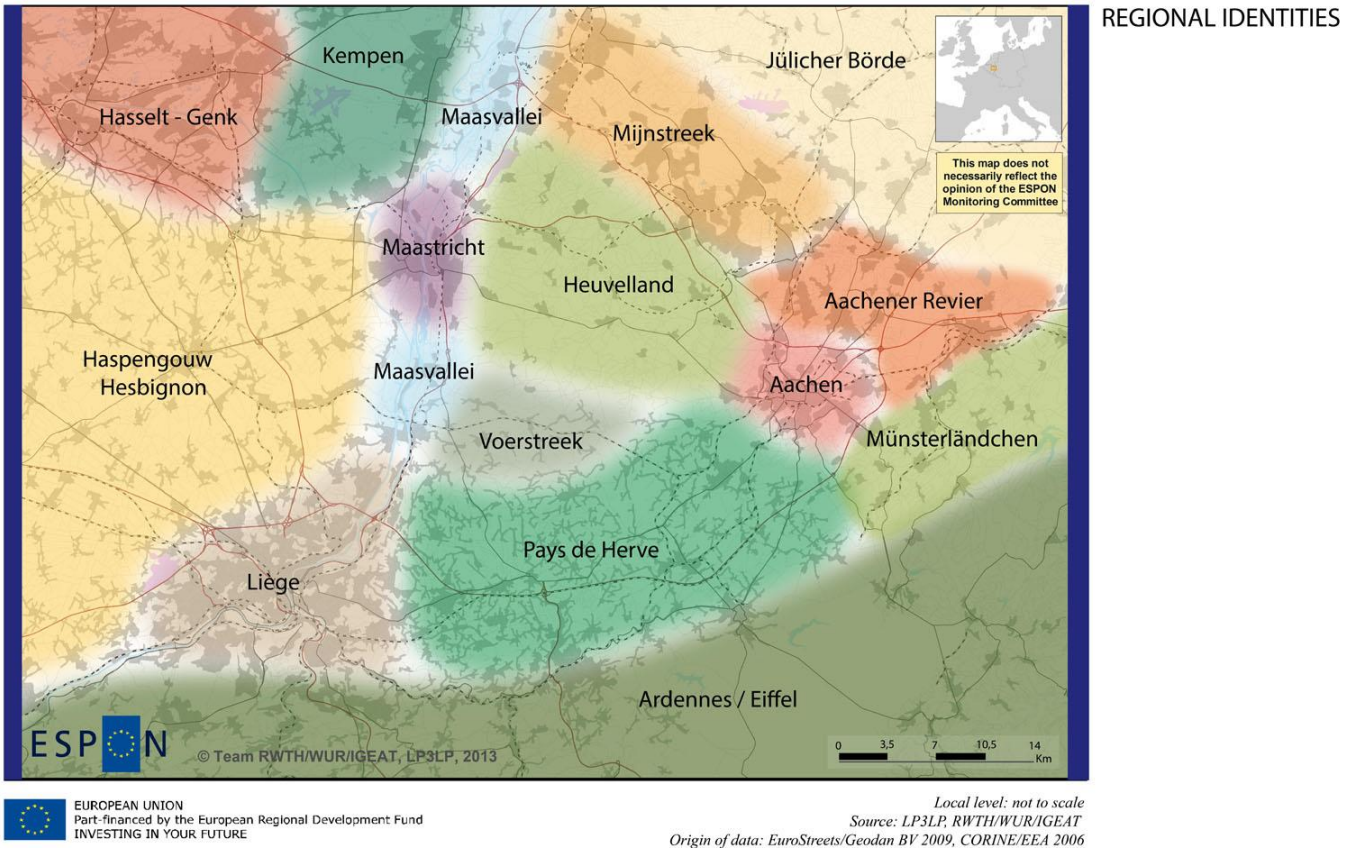
3.4.2. Present context: Landscape Structure and Cultural identities

The basis for the landscape perspective is provided by tangible and intangible characteristics that are considered as determining and lasting. They are important components of the region's identity and a solid base for the five core qualities (relief, green character, water appearances, cultural heritage and polycentric settlement pattern), and enabling both unity and diversity throughout the landscape.

The landscape structure map below consists of the predominant physical-spatial structures of the region (Map 2, next page). The map shows plateaus, river valleys, steep slopes and dry valleys, gentle slopes, major water features, urban areas and major infrastructure. They provide a coherent structure at the regional and local scale. The landscape structure guides *which* guiding principles can be applied *where* in order to create a coherent and robust landscape.



Map 2 ***Landscape Structure 3LP*** *(see Atlas of Maps for the map on A3 format)*



Map 3 Regional identities (see Atlas of Maps for the map on A3 format)

The cultural identities of the area show that national and regional borders, differences in legislation and regulations, as well as different cultures will cause variety when implementing guiding principles. While the objective and principle may be generic, the implementation will be directed by cultural differences and lead to local specifics. They define how the guiding principles will be worked out in detailed plans, and how – under which laws and regulations and with which instruments – they will be implemented. We have distinguished 15 different regional identities in the Three Countries Park landscape (see Map 3, previous page). The areas with differentiating regional identities are identified in cooperation with the stakeholders. These areas are known under these names in the 3LP region. This **layer of cultural identities** reflects cultural differences, which play an important role in the (local) elaboration and implementation of the guiding principles. The spatial expression of cultural identities consists of areas or regions defined by cultural coherence, landscape character, administrative borders and how they are commonly known to people

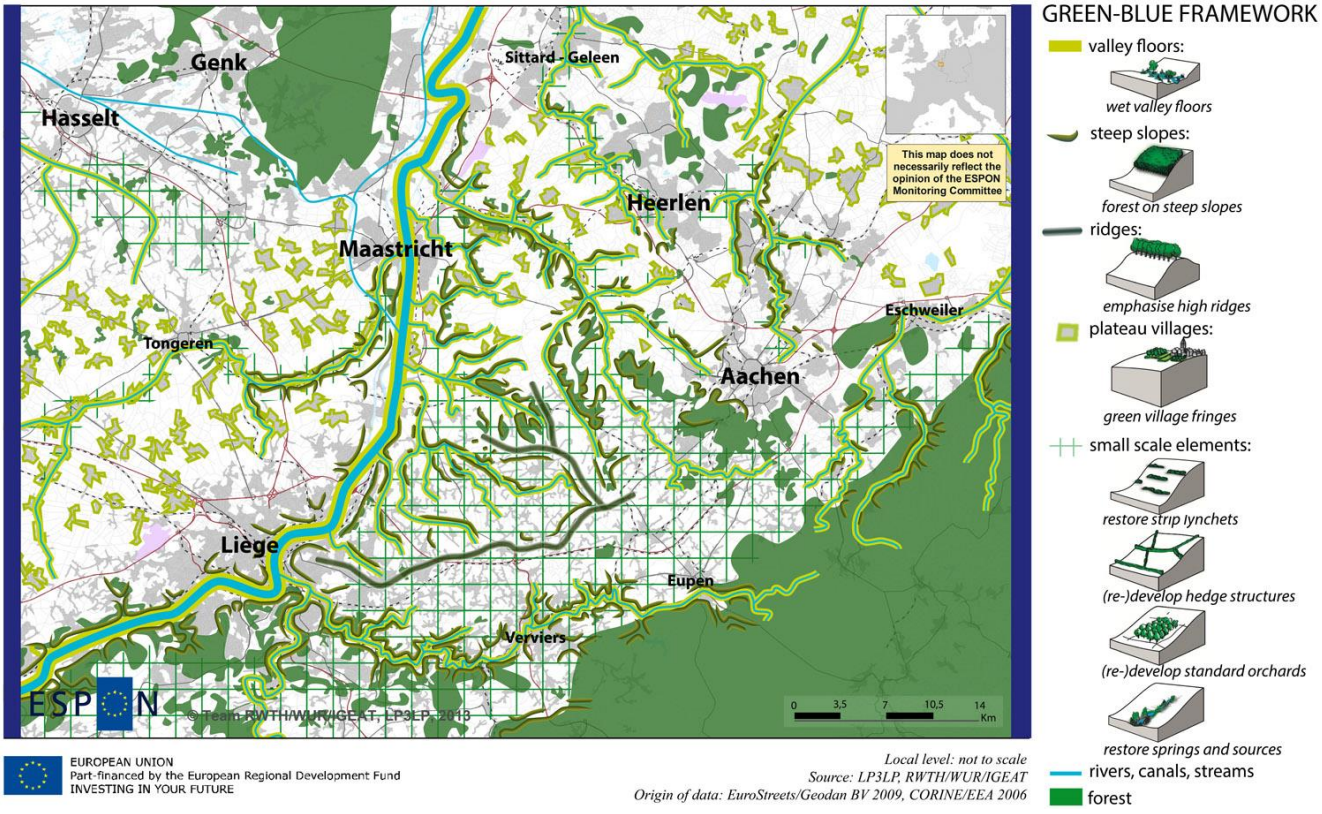
3.4.3. Future structures emerging on a regional scale: Green-blue framework , Urban-open space framework

As described above, the landscape structures guide which guiding principles can be applied where, in order to create a coherent and robust landscape. Table 7 shows how the guiding principles relate to the physical spatial structures of the region. From this application of the guiding principles two frameworks on a regional scale emerge: the green-blue framework and the urban-open space framework.

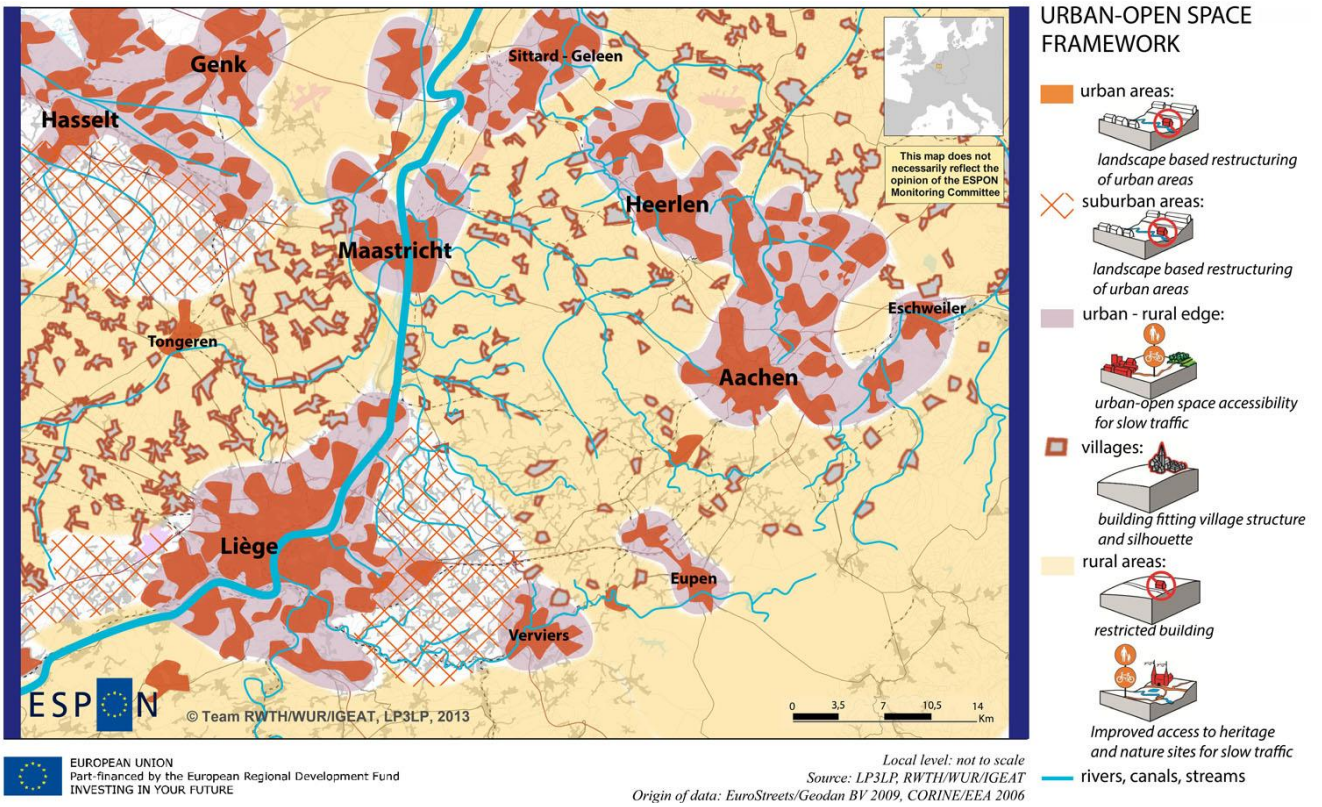
Table 7 Guiding principles and physical structures of the region *(Source: own elaboration)*

Guiding principle	plateaus	ridges	Steep slopes	Gentle slopes	Valley floors	Urban areas
1. Wet valley floors					■	■
2. Forest on steep slopes			■			■
3. Emphasise high ridges		■				■
4. Green village fringes	■					
5. Restore strip lynchets			■	■		
6. (Re-)develop standard orchards				■	■	■
7. (Re-)develop hedge structures				■	■	
8. Restore springs and sources			■	■		
9. Restricted building	▒	■	■	▒	■	
10. Building fitting in village structure and silhouette	■					
11. Landscape-based restructuring of built-up areas						■
12. Urban-open space accessibility for slow traffic						■
13. Improved access to heritage and nature sites for slow traffic	■	■	■	■	■	

■ *Applicable* ▒ *Application with careful exceptions*



Map 4 Green-blue framework (see Atlas of Maps for the map on A3 format)



Map 5 Urban-open space framework (see Atlas of Maps for the map on A3 format)

Green-blue framework

Map 4 shows the green-blue framework that emerges when the following guiding principles are applied throughout the Three Countries Park landscape:

- Wet valley floors
- Forest on steep slopes
- Emphasise high ridges
- Green village fringes
- (Re-)develop standard orchards
- (Re-)develop hedge structures
- Restore strip lynchets
- Restore springs and sources

This green-blue framework preserves and enhances landscape quality, biodiversity, a sustainable and resilient water system, and a green and lush setting for recreation and tourism by creating a coherent and resilient spatial green-blue 'backbone' for the region. Its spatial expression consists of forest, linear plantings, landscape elements, marshlands and watercourses.

Urban-open space framework

The urban-open space framework (Map 5) emerges from the application of the following guiding principles:

- Restricted building
- Building fitting in village structure and silhouette
- Landscape-based restructuring of built up areas
- Urban-rural accessibility for slow traffic
- Improved access to heritage and nature sites for slow traffic

The urban open space framework supports the preservation and enhancement of the landscape quality by providing guidelines for urban sprawl, urban shrinkage and access and linkages for slow traffic. Its spatial expression consists of open, un-built spaces and fringe areas.

3.4.4. Place-based solutions

The guiding principles as well as the blue-green and urban-open space frameworks are still abstract and on a large scale. They need to be elaborated into place-based solutions that consider the specific physical and cultural situation at hand and take up actual spatial-economic developments. This is an essential part of the landscape perspective and can only be done with local people and local knowledge involved.

Although all guiding principles need to be elaborated into place-based solutions, some are stricter in their elaboration than others. 'Wet valley floors', 'forest on steep slopes', 'emphasize high ridges' and 'restricted building' are the more strict guiding principles. These principles are therefore expected to add to the unifying quality of the landscape (Map 24 in the Atlas of Maps shows a map with these 'unifying principles'). Other principles like 'landscape based restructuring of urban areas', '(re-) development of hedge structures' and 'urban-open space accessibility' can be elaborated in multiple ways on a local scale.

To give an idea what a place-based elaboration could be, we draw up two hypothetical examples, one for an area in Pays de Herve around Thimister-Clermont and one for the Wurm near Eygelshoven. We will show a summary of the Wurm-example below. Note that these elaborations are just sketches based on the application of the guiding principles on a more detailed scale, in these sketches other spatial issues or developments are not included, nor has there been any input from local stakeholders or specific local knowledge. This means that these examples are not 'culturally embedded'. The two examples, including the positioning of the locations in the 3LP region and an analysis of the local landscape structure are shown in the Scientific Report, Chapter III.4.

Example: Wurm

The Wurm example shows a part of the Wurm river, located at the border of Germany and the Netherlands. This example is on the border of urban and rural space. Based on the existing landscape structure the following guiding principles are relevant:

- Wet valley floors
- Forest on steep slopes
- Green village fringes
- (Re-)develop standard orchards
- (Re-)develop hedge structures
- Restricted building
- Landscape-based restructuring of built up areas
- Urban-rural accessibility for slow traffic

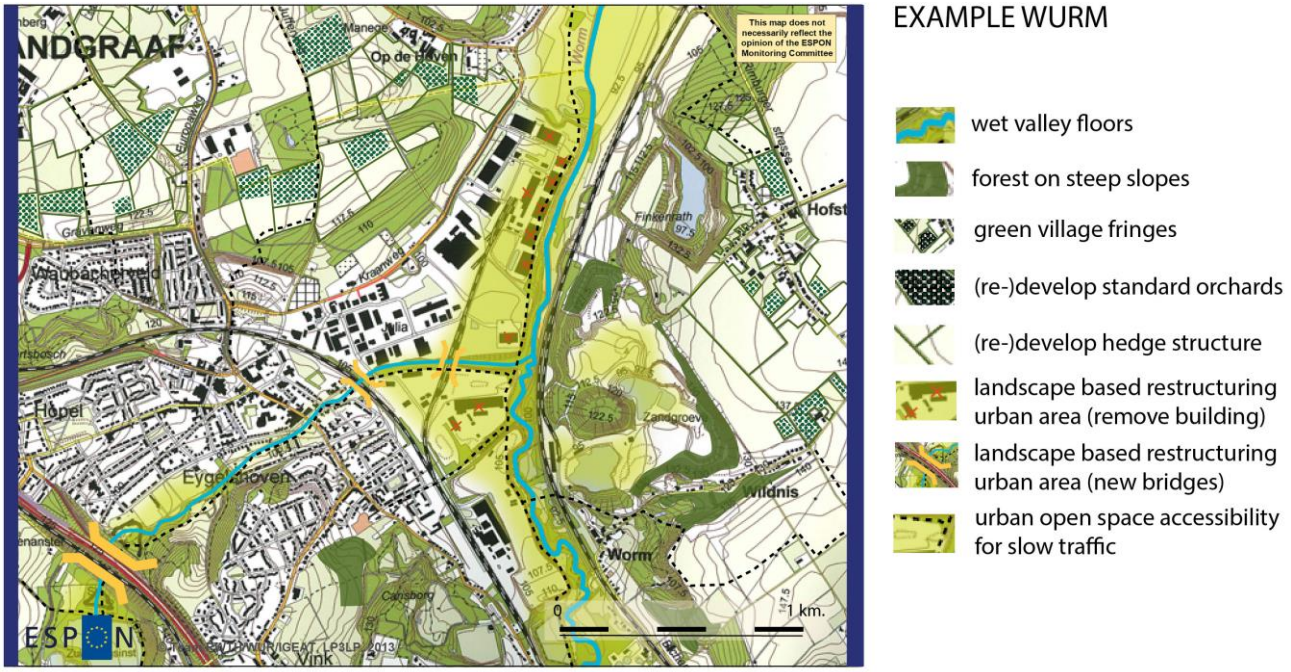


Figure 13 Application of the guiding principles: Example Wurm

In this example, the valley of the Wurm guides restructuring of the urban area. Several buildings in the Wurm valley are removed and several measures are taken to resurface the stream running through Eygelshoven. Three new bridge constructions for the road and railway crossings will be the biggest operations for implementation of this measure. The sandpit east of the Wurm will be part of the wetted valley floor of the Wurm with

forestation on the steep slopes. In the north-west corner, hedges and standard orchards are added on the gentle slopes. Along the small village of Hofstadt in the north-east a green village fringe of hedges, small paddocks and orchards is developed. Throughout the area routes for walking and cycling are developed, improving the urban-open space accessibility.

For a broader impression of the relationship between the guiding principles and local, place-based solutions please go to the Scientific Report Chapters III.5 and III.6. Chapter III.5 compares the guiding principles with recent BSc thesis work of landscape architecture students on the Geul-Gulp valley. Chapter III.6 compares the guiding principles with existing cases.

3.5. Application and performance of the landscape perspective

The preservation, management and deliberate development of landscapes in Western Europe is not a short-term activity. Many stakeholders are involved, it includes complex relations between a variety of land uses and activities, and implementation is not simply a matter of construction, but rather a long and bumpy course of policy making, creative use of financial and judicial instruments, lobbying, finding the right partners and alliances and then, hopefully, defining a concrete project. Within this policy and project making the focus should also be on the long term preservation, management and maintenance of the landscape. Especially several elements of the green-blue framework, like wet valley floors and forested steep slopes, thrive through long term preservation. No building in these parts of the landscape will help to preserve these elements in the landscape, but will require translation of these principles into legal measures of landscape protection, e.g. through binding land use plans or agreements between the regional level and local communities. Thus, the landscape should be critically assessed on the existing valuable landscape elements and structures that need this preservation. However, preservation, management and maintenance of the landscape should also be addressed in projects that realise -new- parts of the landscape perspective. Only through long term preservation and management the qualities of the landscape will fully develop.

In the search for suitable application strategies other landscape developments could be visited and studied, like the Ooijpolder in the Netherlands that illustrates the role of unexpected coalitions and the long term needed. The Emscherpark development in Germany relates to the urban context that also characterises the Three Countries Park, as is the cross-border Euro Metropolis Lille-Kortrijk-Tournai.

The landscape perspective for the Three Countries Park is developed on a conceptual regional scale (scale 1:100.000). As described, the landscape perspective will have to be elaborated in place-based solutions (e.g. scale 1:5.000 – 1: 10.000). These place-base elaborations give room to express the local cultural identity as part of these solutions and should include the specific local spatial and economic developments. Differences in cultural identities for example relate to building plots, architecture and village structures. Spatial and economic developments can vary substantively throughout the region. For example, in several parts of the Dutch territory the population is shrinking over the coming years, whereas in the German and Belgium parts population is expected to grow,

ending up in differences in needs for housing and amenities. The guiding principles, the cultural identity, the spatial and economic developments all are essential to come to proper and comprehensive place-based solutions (Figure 14). We acknowledge that the step from a conceptual scale to place-based solutions is quite substantive. It could be considered to 'translate' the still rather abstract guiding principles and the landscape structure maps towards a 1:50.000 – 1:25.000 scale in order to facilitate the development of place-based solutions (see green infrastructure strategy, Chapter 4.3.1).

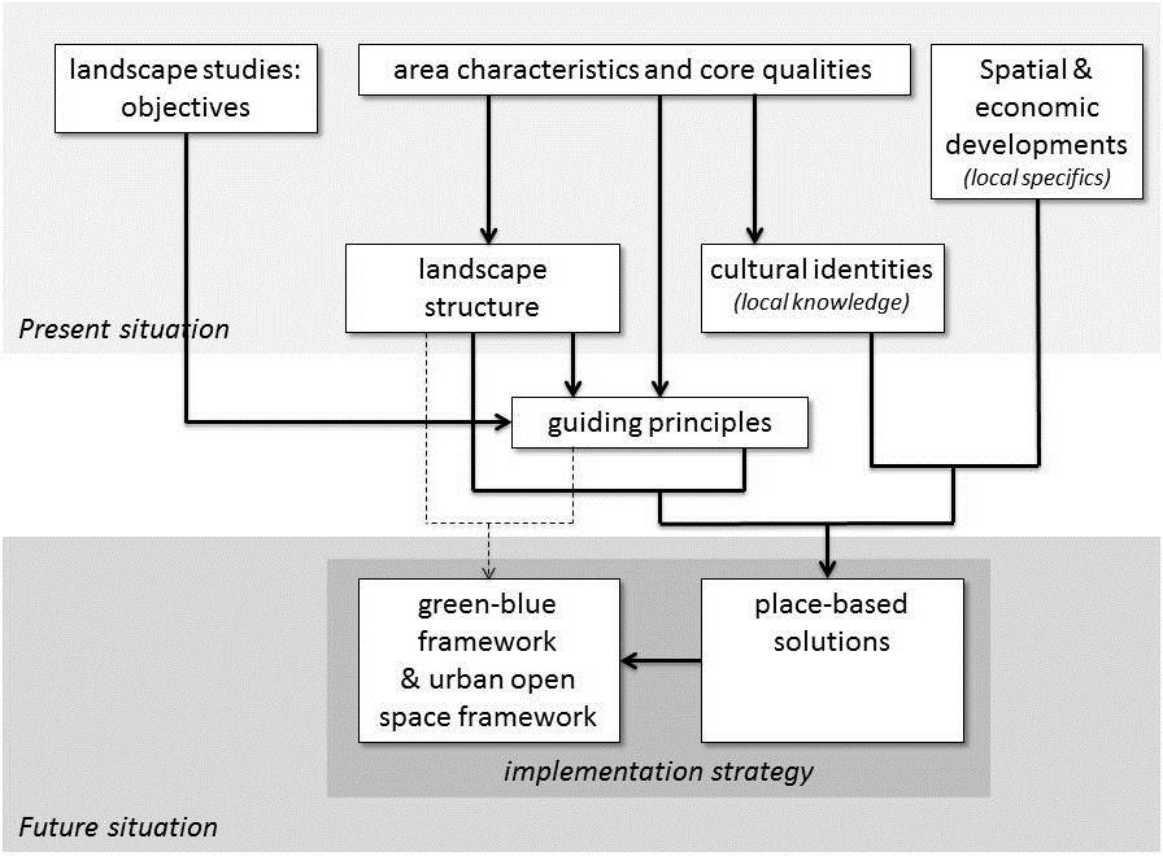


Figure 14 Schematic flow-chart 3LP landscape perspective *(Source: own elaboration)*

Figure 14 shows that the base for the guiding principles lies in the objectives of previous landscape studies, the area characteristics and core-qualities, and the existing landscape structure. It summarizes the elements and steps that were taken to develop the 3LP Landscape Perspective, and therefore can be useful for other – cross border – regions which want to develop an overarching landscape perspective for their regional landscape. The scheme also illustrates that the green-blue and urban open space frameworks will emerge through the realisation of place-based solutions. The maps of these frameworks, presented in this report, should therefore be seen as frames of reference, a long term goal or as ambitions. Various implementation strategies are needed to take the step from perspective to action. The next chapter proposes some policy options with regard to the European policy context.

4. A landscape policy for the Three Countries Park: Recommendations at regional cross-border level

4.1. Introduction

The recommendations for a 3LP landscape policy intend to form an interface for connecting local-regional initiatives across the Dutch, Belgium and German borders with each other and EU policy. The proposed landscape policy basically consists of three parts:

1. The landscape perspective addressing common objectives, guiding principles and their spatial explicitness as described in the previous chapter, particularly referring to the means of "landscape planning and protection",
2. A landscape partnership recommendation addressing questions of governance and capacity, particularly referring to "landscape management" (Chapter 4.2), and
3. Four thematic strategies linking the guiding principles with specific EU priorities and instruments (Chapter 4.3), referring to all three means of landscape policy as promoted by the European Landscape Convention.

The implementation of the landscape perspective and its guiding principles will require physical changes in the landscape and concerted action by various public and private land owners and users. As mentioned above, this will be an ambitious and long-term endeavour in one country and even more so in a cross-border setting. Only a few physical measures are supported by EU policy, which are directly applicable to the guiding principles. For example, financial support for "*afforestation and creation of woodland*", being a rural development measure, could be directly used for the implementation of principle 2: 'forests on steep slopes'. Other policies apply more indirectly. They may be exploited especially based on the functional (not so much aesthetic-structural) properties of the guiding principles (see Scientific Report, Chapter III.3, Table 10). For example, those principles relating to water based services, like 'wet valley floors', 'restore strip lynchets', or 'restore springs and sources' may take on place-based forms, if included as elements in river basin management plans as per the Water Framework Directive. Therefore, a close cooperation with river basin authorities and further actors from the water sector will be essential. Similarly, principles functioning as 'landscape buffer' for temperature fluctuations and disaster resilience, such as again 'wet valley floors', 'green village fringes' or 'forests on steep slopes' could become designated part of climate adaptation strategies. Also here, a close cooperation with the responsible authorities is required. Furthermore, carbon credits may be used for principles protecting and enhancing tree stocks and soil carbon pools in the landscape. A table in the Scientific Report (Table 19, p. 151) gives a rough overview of a mutual relationship between EU policies and the guiding principles of the landscape perspective. To be able to use these potential sources of support, but also to provide coherence and cohesion between different regional-local 3LP initiatives, we propose a landscape partnership and thematic regional strategies linking the principles up to the strategic EU policy level (Figure 15 below).

Figure 15 ***Matrix showing the relationship between the guiding principles, the policy recommendations and European investment priorities*** *(for the latter see relating thematic objectives and sources in Scientific Report, Table 12, pp. 131)*

Landscape perspective Guiding principles		Landscape partnership and 3LP Fund	Thematic strategies			
			Green infrastructure strategy	Quality production strategy	Complementary biomass strategy	Cultural heritage and access strategy
Principles (re)establishing functional vegetation structures in the landscape	1. Wet valley floors	The implementation of all principles requires intense communication and cooperation over multiples land uses/ administrative sectors and land patches, especially when concerning privately owned land. A landscape partnership including operational landscape management will provide critical mass and capacity for coordination and will stimulate cross-sectoral innovation.	All vegetation structures of the green-blue principles are potential elements of a green infrastructure network und thus supported by a green infrastructure strategy.	All vegetation structures of the green-blue principles provide ecosystems services and could be supported by a payments for ecosystem services scheme as well as regional quality scheme as proposed under this strategy.	Most of the vegetation structures of the green-blue principles need maintenance and can thus be a source of biomass besides providing ecosystem services complementary to food agriculture. In turn bioenergy use can provide income opportunities and reduce maintenance cost.	All vegetation structures of the green-blue principles are cultural landscape features. The landscape information system proposed under this strategy will enhance public and private appreciation of these features, foster cultural tourism, and may raise support via a 3LP Fund open to civil membership (see landscape partnership).
	2. Forest on steep slopes					
	3. Emphasise high ridges					
	4. Green village fringes					
	5. Restore strip lynchets					
	6. (Re-)develop standard orchards					
	7. (Re-)develop hedge structures					
	8. Restore springs and sources					
Principles concerning built structures	9. Restricted building	The implementation of almost all principles requires public and private investment. Developing a 3LP foundation or trust in the longterm and setting up a 3LP Fund supplied by public and private financial sources, especially from beneficiaries of quality landscapes is proposed.	Green infrastructure planning to guide local spatial planning of 'grey infrastructure'	(Interest alliance between the land scape partnership, farmers organisations and tourism agencies)	–	Restricted or sensitive building in vicinity to sites recognized by the strategy and access hub network
	10. Building fitting in village structure and silhouette				–	
	11. Landscape-based restructuring of built-up areas				–	
	12. Urban-open space accessibility for slow traffic		Hiking and biking routes as part of green infrastructure planning and funding	e.g. by urban agricultural parks	–	Enhanced physical access by a cross-border access hub network
	13. Improved access to heritage and nature sites for slow traffic			e.g. by payments for cultural services	–	
EU investment priorities for regional development		(1a) enhancing research and innovation infrastructure (R&I) and capacities to develop R&I excellence	(6d) protecting biodiversity, soil protection and promoting ecosystem services […] and green infrastructures; (5a) supporting dedicated investment for adaptation to climate change		(4a) promoting the production and distribution of renewable energy sources	(6c) protecting, promoting and developing cultural heritage
EU investment priorities for rural development		(1a) fostering innovation and the knowledge base in rural areas (6b) fostering local development in rural areas	(4a) restoring and preserving biodiversity […] and the state of European landscapes; (5e) fostering carbon sequestration in agriculture & forestry	(3a) better integrating primary producers into the food chain through quality schemes, promotion in local markets and short supply circuits	(5c) facilitating the supply […] of renewable sources of energy, […] and other non food raw material for purposes of the bio-economy	(6b) fostering local development in rural areas; (6c) enhancing use and quality of information & communication technologies (ICT) in rural areas

An earlier version of the proposed partnership and strategies has been discussed with local experts representing different economic sectors. A list with the participating experts and main results from the expert meetings can be found in the Scientific Report (Chapters IV.2.7 and IV.3.1). Another part (Chapter VI.1) lists various EU priorities, policies and instruments as well as local-regional initiatives within the 3LP and external reference projects related to the recommendations presented in the following.

4.2. The Three Countries Park (3LP) as a future "European cross-border landscape partnership" for high-quality and innovative landscapes (see also Scientific Report, IV.2.1, p. 140)

The implementation of the landscape perspective will not only require physical changes, but also a ***change in behaviour and habits of a multiplicity of actors*** such as land owners, land managers, planners, and engineers etc. A critical issue is that the ***guiding principles to a large extent apply to privately owned land***. In the Städteregion Aachen, for example 37,5 % of the land area is owned by public bodies, while 62,5 % is privately owned (Städteregion Aachen, 2013). Similar numbers can be expected for other parts of the Three Countries Park. The spatial pattern of the land property regime in the Städteregion, displayed in the Atlas of Maps (p. 23), reveals that much of the publicly owned land is forested land, which is not subject of the guiding principles. On public land the desired changes may be 'simply' enforced by political decisions (involving e.g. a couple authorities and public participation procedures). Implementing the principles on private land, however, means to convince very different land users to eventually change their activities and invest into different modes of land management[10].

Against this complex backdrop, we propose to further develop the existing 3LP initiative into a dedicated "***European cross-border landscape partnership***" for high-quality and innovative landscapes, which can enable some sort of coordinated 'transboundary landscape governance' reaching out to individual actors. By "partnership" we basically mean a cross-border collaborative network of existing institutions and organisations – a ***basic partnership*** and ***strategic partnerships*** – working **on *the basis of cooperative agreements with a European orientation***[11]. The basic partnership comprises the members of the existing 3LP initiative, i.e. governmental institutions and competent authorities for spatial/landscape policy and planning, as well as local/regional landscape

[10] Looking e.g. at the first principle 'wet valley floors': If a particular valley floor is publicly owned, a political decision could change that area to a wetland reserve, for example, or to retention ponds for flood protection. Usually, 3LP valley floors, however, will rather consist of a multiplicity of privately owned land patches, drained and managed as e.g. grassland, or plantation or garden etc. Rewetting such a valley floor would mean that e.g. a farmer needs to become a wetland manager, leave land fallow or sell part of his property; or that a resident needs to insulate the foundations of his house due to rising groundwater tables. Thus, implementing this guiding principle on private land will require good reasoning, individual communication, negotiation and compensation, eventually. This is also valid for other guiding principles affecting private property such as afforestation on steep slopes, restoring springs, hedges and strip lynchets or granting and improving access to heritage sites.

[11] It should be noted that the research team has no competence in institutional and legal affairs. This proposal therefore is to be understood as a rough draft to be further investigated by legal experts in terms of type of contracts, decision making power and advisory competences etc.

organizations. Besides “Pays de Herve Futur” we propose to further invite organisations explicitly dealing with landscape such as “Regionaal Landschap Haspengouw en Voeren“ or “Landschaftsverband Rheinland” etc. These ‘landscape organisations’ in most cases are associated with municipalities and can thus provide communicative channels to local decision makers. The basic partnership should be governed by a ***common interest and goal***, e.g. the protection and enhancement of ‘quality landscapes’. What quality landscapes actually mean needs to be further refined. With a view to the European level we suggest that ***quality landscapes*** *are* ***characterized by distinctiveness and a high level of achievement of environmental & landscape quality objectives as well as provisioning of ecosystem services and biodiversity*** in relation thereto. The partnership may choose from the policy recommendations developed in this study to agree on a 3LP landscape policy and develop a work programme. A first step may be to adopt the landscape perspective as a guiding framework for partners’ individual and coordinated policy actions as well as to prioritize and select from the thematic strategies (presented below under 4.3.).

In order to conduct the partnership and facilitate voluntary cooperation, it is recommended to invest into a ***lean operational “landscape management***”, performed by a multilingual interdisciplinary core team of e.g. three professionals representing each country. I.e. we propose to invest into human capacity, making use of the ELC instrument “landscape management”, which according to the definition by the ELC is meant to be a stirring and facilitating activity operating with cooperative tools from the perspective of sustainable development. “*Management of landscape is a continuing action aimed at influencing activities liable to modify landscape. It can be seen […] as a territorial project, which takes account of new social aspirations, anticipated changes in biophysical and cultural characteristics and access to natural resources*” (Committee of Ministers, 2008, I.5). The ***informal instrument*** of landscape management may work best in a cross-border situation, where legal conditions and institutional arrangements for more formal instruments of landscape protection and landscape/ land use planning are very different in each country. However, landscape management could catalyse the transfer of ideas and results arising from the 3LP partnership - e.g. the adopted red guiding principles - into more legally binding instruments according to the country-specific situation. Furthermore, it will not only provide the critical mass ***for cross-border synthesis*** but also ***creative and innovative stimulus*** by cross-linking various sectors.

The EU offers the cohesion policy tool of ***Integrated Territorial Investment*** (ITI) especially for “*integrated sustainable urban development*” (European Commission, 2011e) as well as for cross-border territorial cooperation (European Commission, 2011d) (INTERREG). With this instrument it is possible to combine different EU Funds and to bundle different investment priority axes for integrated strategies and projects. Thus, this option may also hold promise for ‘integrated sustainable landscape development or management’, although not explicitly mentioned by the Commission. The key elements of an ITI are: (1) a designated territory, (2) an integrated territorial development strategy, (3) a package of actions to be implemented, and (4) governance arrangements to manage the ITI. Point 1 and 4 are more or less given by the 3LP initiative/ partnership. Regarding point 2 and 3 the partnership may draw from the landscape perspective and thematic strategies presented here and link them with the Euregio Meuse-Rhine territorial development strategy EMR 2020, especially the horizontal packages “territorial analysis”

and “sustainable development” (Lenkungsgruppe EMR2020, 2013). Another option especially for ‘project communities’ taking further the thematic strategies, may be the instrument of ***Community Led Local Development*** (European Commission, 2011c) based on the formation of local action groups as well as the ***LEADER program*** for rural development (European Commission, 2011i, Art. 42-45).

With regard to cooperation with various land-use sectors the basic partnership should seek to gradually build up ***strategic partnerships through concrete projects*** with further stake- and knowledge holders. Partnering ***with river basin organisations, nature organisations, tourism agencies and agricultural advisory services etc.*** will be essential for pursuing the thematic strategies. Thereby extensive use should be made of already existing pathways of communication and cooperation with individual land owners/ users and market actors. Furthermore, we regard the ***active involvement of the public*** as key for widespread acceptance, recognition and success of the landscape partnership. Therefore the partnership may build on or launch participative processes conducted by the landscape organisations or the competent authorities potentially responsible for defining landscape quality objectives (LQO). The specific priority area “Environmental governance and information” of the LIFE Sub-programme for Environment (European Commission, 2011j, Art. 9(1)) may hold promise for further stakeholder and public involvement. The ***use of creative tools*** such as mapping, drawing, photographing and storytelling etc. e.g. in combination with awareness raising land art events should be considered. A landscape information platform (as proposed under the second thematic strategy) will facilitate such processes. Last but not least the ***integration of volunteer actions***, like maintenance of small landscape elements, and respective organisations will also be highly beneficial as well as exchange of experiences with other cross-border regions.

The landscape partnership and its operational landscape management, even if a lean one, certainly need a secure budget and continuous resources to execute its activities and projects. The partnership may start operation with internal resources and seek external funding for capacity building and the proposed projects. In the long run a more elegant option would be to develop an independent ***3LP Fund*** from both ***public and private sources***. Public sources may be e.g. a national lottery. To raise private money ***beneficiaries of quality landscapes*** and their services should be identified and asked to contribute, like ***responsible industries*** from the water, food and tourism sectors. Also small amounts of a large number of ***citizens*** could make a difference. Therefore, it may be considered to transform the agreement-based partnership into another legal institutional form like a ***3LP foundation or*** *a* ***3LP landscape trust*** allowing ***citizen membership*****.** Even setting up a citizen shareholder company granting social-ecological benefits as return on investment could be possible (see references in Scientific Report IV.2.1., pp. 141). Such an organization – with the goal of ‘quality landscapes’ enshrined in its statutes – may also use the Fund for buying land in strategic areas like on steep slopes, on valley floors or at important ecological connections. It may license the ‘right of land use’ to private operators and bind it to specific obligations of maintaining and restoring services and qualities (compare the idea of common property trusts: Barnes, 2006).

4.3. Thematic strategies

Partnering, communication and collaboration through landscape management as well as a dedicated 3LP Fund will support all thematic strategies described in the following. The strategies provide different pathways of action for realizing the guiding principles in relation to EU policy as shown in Figure 15. They should not be looked at in isolation, but overlap and complement each other in multiple ways.

4.3.1. Green infrastructure strategy (see also Scientific Report, IV.2.2, p. 143)

The most promising instrument at EU level for realizing the proposed 3LP landscape perspective is the promotion of green infrastructure (GI) as a designated investment priority of regional development. While no exact definition exists, ***green infrastructure*** basically is a strategically planned ***network of green areas and landscape features***, ***which connect fragmented habitats*** for the protection and rehabilitation of biodiversity, while simultaneously ***delivering a wide range of ecosystem services*** – in a multifunctional way. The concept can be understood as a lens bundling sectoral views of e.g. water management, climate change adaptation and mitigation, biodiversity conservation, and ecosystem restoration etc. It can be applied in an open landscape but also within a rather urban context. Integrated spatial planning and land-user involvement is considered a precondition for successful implementation (European Environment Agency, 2011, pp. 30).

a) Green-blue framework:

Regarding the green-blue framework the principles No. 1-8 basically all (re)establish functional vegetation in the landscape and can be considered elements of a future green infrastructure network. We therefore recommend developing the 3LP landscape perspective into a ***Green Infrastructure Plan***. Such a plan will particularly pick-up the ***'green-blue principles' and apply them on a meso scale*** (1:50.00 - 1:25.000) based on other projects' results (e.g. INTERREG projects Habitat Euregio and Aquadra), a synthesis of further data (e.g. digital terrain model, flood risk etc.) as well as regional and local knowledge. The four adjacent basins of Geule-Gulp, Jeker and Berwinne (Aquadra) as well as Wurm (Wurmtal project) may serve as pilot project areas. To reduce complexity it is suggested to start with the unifying guiding principles (see Map 24 in Atlas of Maps). A clear focus should be set both in urban and rural parts of the landscape on the following key services:

(1) Habitat services with regard to biodiversity targets. Territorial units: habitat networks

(2) Basic regulating services mediated by the water flow in the landscape, i.e. soil and water quality regulation, erosion control and flood prevention, as well as climate regulation (temperature and moisture buffering) with regard to adaptation. Territorial units: small river basins

(3) Cultural services (esp. identity, sense of history, aesthetic appreciation, recreation, and as a resource for the tourism sector) with regard to landscape quality objectives[12]. Territorial units: landscape identity areas (as shown in Map 3, p. 42)

In the '***cityscapes*'** of Liège, Maastricht and Aachen etc. and the suburbanized landscapes green infrastructure may actually include ***all green open spaces*** plus built structures like green roofs. Air flow and quality regulation could be additional services to be considered in an urban context. In the more ***rural parts*** of the 3LP landscapes ***NATURA 2000[13] and other protected areas*** and the (missing) links between them (e.g. ecological corridors) will ***form the core structure together with elements along rivers, valleys, ridges and steep slopes*** as suggested by the landscape perspective. In addition to the blue-green principles and their vegetation structures typical components of a 3LP green infrastructure can involve unmanaged features like small wet depressions and tree groups within pastures and croplands, or managed elements like contour hedges and agroforestry as well as built structures like ecoducts or constructed wetlands.

The Green Infrastructure Plan is to be understood as a strategic plan which will guide individual actions by the members of the landscape partnership and further competent authorities, organizations and land users. The plan can help to prioritize public purchase areas for implementing the guiding principles. The new category of ***"integrated projects" of the European LIFE Fund*** seems interesting in this regard meaning "*projects implementing in a sustainable manner, on a large territorial scale, in particular, regional, multi-regional or national scale, environmental or climate strategies or action plans required by specific environmental or climate Union legislation […]* (European Commission, 2011j, Art. 2(b)). Furthermore, the operational landscape management should actively seek collaboration with river basin authorities to ***integrate water flow and quality mediating principles*** (as roughly indicated in the Scientific Report, Table 19, p. 151) and their place-based green infrastructure solutions ***into the next generation of river basin management plans*** due in 2015. A similar initiative should be taken to get the principles recognized by ***regional climate adaptation strategies***.

As already discussed much of the change will need to happen on privately owned land. Besides rural development measures like Natura 2000 and Water Framework Directive payments or support for afforestation etc. (Scientific Report Table 13, p. 133), another EU instrument which can be used mainly on croplands is the designation of ***7% ecological focus area*** (5% until 2017) of farms receiving direct payments (European Commission, 2011g, Art.32). In this latter regard the 3LP initiative should seek partnership with the competent authorities and agricultural advisory systems responsible for direct payments as well as farmers' organizations. Under a cooperative arrangement individual farm solutions - regarding which type of green infrastructure element could be best designated or applied as ecological focus area and where - could be worked out with interested farmers or groups of farmers. In sum this would yield much higher benefits than

[12] In cases where LQO have been already defined, cultural services may be interpreted from the results of public consultations. Otherwise, the assessment of cultural services, e.g. in the form of spatially distinct 'hotspots and coldspots' (Plieninger *et al.*, 2013) may be linked to creative methods of public participation within the process of defining LQOs.

[13] For a map of Natura 2000 and other protected areas in the 3LP, see the Map Atlas, p. 21

uncoordinated, somewhat arbitrary, single actions. However, this instrument is limited insofar as it does not apply to permanent grasslands as well as to participants of the small farmer scheme.

Beyond the mentioned sources for compensational payments, financial resources will be needed for synthesis of existing knowledge and data, further studies especially for cultural services, as well as planning/ management, and actual investments. The European Commission announces "*to set up an EU financing facility by 2014 to support people seeking to develop GI projects*" (European Commission, 2013a, p. 11) and points to the possibility of "multi-partner deals involving public and private funds" (ibid. 9). The establishment of a working cross-border green infrastructure will require a long-term strategic process. However with the implementation of such a strategy the 3LP could position itself as a pioneer and key node within a ***potential future Trans-European-Network of Green Infrastructure*** (TEN-G). "*Member states and regions are encouraged to seize the opportunities for developing GI in a cross-border […] context through European territorial cooperation programs*" (ibid.)

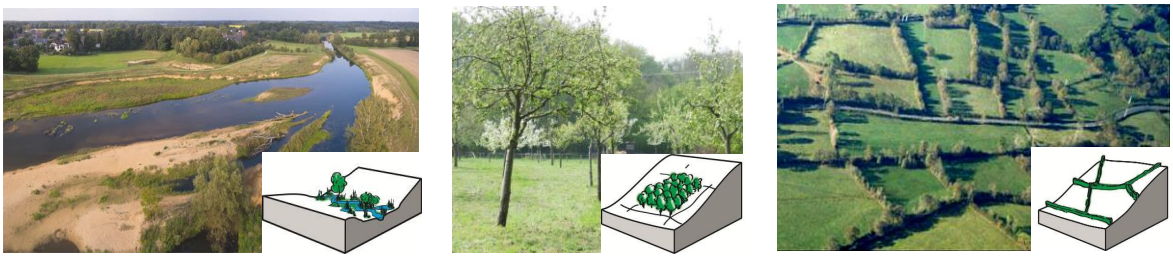


Figure 16 Examples of physical measures enabled by the Green Infrastructure strategy: re-development of wetlands/buffer strips (left), orchards (middle) and/or hedge networks (right) *(Image sources: bezreg-muenster.nrw.de; nfg-borken.de; profudegeogra.eu) (Note: For a map related to the Green Infrastructure strategy see the blue-green framework Map 4, p. 44)*

b) Urban open space framework:

The European Commission points to the need to mainstream green infrastructure into other key policy sectors and "to ensure that it becomes a standard part of spatial planning and territorial development" (European Commission, 2013a, p. 8). This is especially relevant for the application of the '***red guiding principles'*** (No. 9-13) of the landscape perspective concerning built structures. Since municipalities and local communities are key decision makers for designating building areas and giving single approvals/ building permits, their involvement will be critical. Therefore it is recommended to discuss various stages of green infrastructure planning in ***workshops with local planning divisions*** and explore the transfer of results into ***local zoning plans***. A first step could be the comparison of the Landscape Perspective with the existing spatial planning on regional and local level, e.g. in a pilot project "Spatial planning for quality landscapes". In this sense, green infrastructure based landscape planning and management can also entail landscape protection. Furthermore, workshops with planning authorities and design professionals could also explore alternative landscape-based 'growth models' for villages and towns as well as the question how green infrastructure in cities can qualify (sub-) urbanization processes. Such activities can draw on valuable experiences with ***inter-municipal 'land pools'***: Making use of GIS land inventories and abandoned land

recycling by redevelopment, a variety of examples from Germany (e.g. the Stuttgart Region) may serve as examples (Preuss and Ferber, 2005). Concerning EU instruments the ***Soil Sealing Guidelines*** should be noticed presenting best practices to limit, mitigate or compensate soil sealing (European Commission, 2012b). The proposed Soil Protection Directive (European Commission, 2006) was rejected by some member states und could not enter into force yet. It represents a missing piece in European environmental legislation. As its objective of preserving environmental, economic, social and cultural soil functions (ibid. Art.1) is to a large extent coherent with the sustenance of landscape functions or ecosystem services this directive would most likely benefit sustainable landscape development. However, working on indicative targets for reduced soil sealing could be another informal cross-border option.

By putting the emphasis on value-creation in the landscape, ***green infrastructure can guide the development of 'grey infrastructure'***. This is not only relevant for buildings but also for technical infrastructure **of *sustainable transportation or renewable energy***. With regard to large-scale wind turbine fields – often impacting on cultural landscape services – suitable concentration areas could be identified (e.g. the Jülicher Börde or the Haspengouw), while in other parts installations may be restricted (compare for example 'Vorrang- und landschaftliche Vorbehaltsgebiete' in German regional plans). In this regard the abovementioned pilot project should i.a. focus on the cross-border planning of wind turbine fields in the 3LP. Concerning solar energy, building integrated systems and solar roofs should be favored over large field installations. For bioenergy see the complementary biomass strategy (Chapter 4.3.3). In principle, landscape management could take on a role of ***regional innovators and technology consultants*** here, by collaborating with researchers and technology developers on a smart grid of various smaller-scale renewable energy systems to be developed and designed as attractive features of an innovative cultural landscape.

4.3.2. Cultural heritage and accessibility strategy (see also Scientific Report, IV.2.3, p. 145)

Cultural landscapes, including their characteristic elements (e.g. cultivation patterns, land use mosaic, monuments, architectural style etc.) provide identity/ sense of belonging and recreational opportunities. They constitute a valuable resource for the tourism sector and provide for overall demographic attractivity within any region. The 3LP offers a great variety of at least 15 different landscapes (Map 3), each with its own name, manifold cultural heritage and diverse touristic attractions. Overall, the region has a dense network of interesting roads, bike paths and trails. However, an overview of such assets is difficult to obtain and navigation through the many choices is complicated. Therefore it is proposed to introduce, in cooperation with existing landscape associations and the tourism and transport sector, a cross-border access hub network as a structuring element, which makes use of the existing situation by minimal interventions, providing three forms of access simultaneously:

First, ***informational access*** is offered with web-based infotainment (e.g. about each landscape's formation, history and character, 3LP symbolic sites and European heritage, and sustainable touristic offers etc. as well as quality landscape projects including a representation of the landscape perspective and its principles). Second, ***emotional***

access is enabled by different storylines/ narratives within the information system as well as temporary events of participative action, including land art installations, storytelling/ guided tours and the enjoyment of regional products. Finally, ***sustainable physical access*** will be enhanced by adding/ strengthening nodes within the already growing public mobility network (e.g. including bus, e-car, e-bike sharing and/or P&R, etc.). Especially the last two guiding principles promoting accessibility for slow traffic, i.e. walking and bicycling, can be addressed at this point. Within each of the 15 landscapes (including the major cities), one single access hub is located at a representative location, always at crossings of historic major roads with important bike and hiking trails. This can tie in with the plethora of locally specific networks, having their individual characteristics and development. The virtual and physical access hub network will raise awareness and appreciation of 3LP's landscapes and support for their protection and management. Single heritage sites and their maintenance (e.g. castles and their landscape-water relationships) may then receive greater public and private attention.

In order to select from an abundance of cultural heritage destinations (= elements of high priority regarding their upkeep), it is proposed to apply filters for choosing from existing routes, destinations and narratives at three scales: A European scale filter can highlight sites of European significance or those representing the development of the European community (European narrative, e.g. Carolingian times, coal and steel community, treaty of Maastricht etc.) A 3LP scale filter can collect sites, areas and elements symbolic for the Three Countries Park and border situation (e.g. 'Drielandenpunt', old transition points, viewpoints 'looking over to the other country' etc.). Particularly, a local identity filter can identify the different landscapes of the 3LP by names (e.g. Pays de Herve, Heuvelland, Jülicher Börde etc.) and their specific characteristics, and touristic and civic potential. Subsequently, it will be possible to promote a selection of each landscape's sites and routes offering best landscape experience (including views[14], access to water, biodiversity hot spots, traditional elements, quality farm access, direct purchase etc.). The access hub network should furthermore provide a scene for sites and projects representing models for innovative high-quality landscape development highlighting that ***the landscapes we create today are the natural-cultural heritage of future generations***.

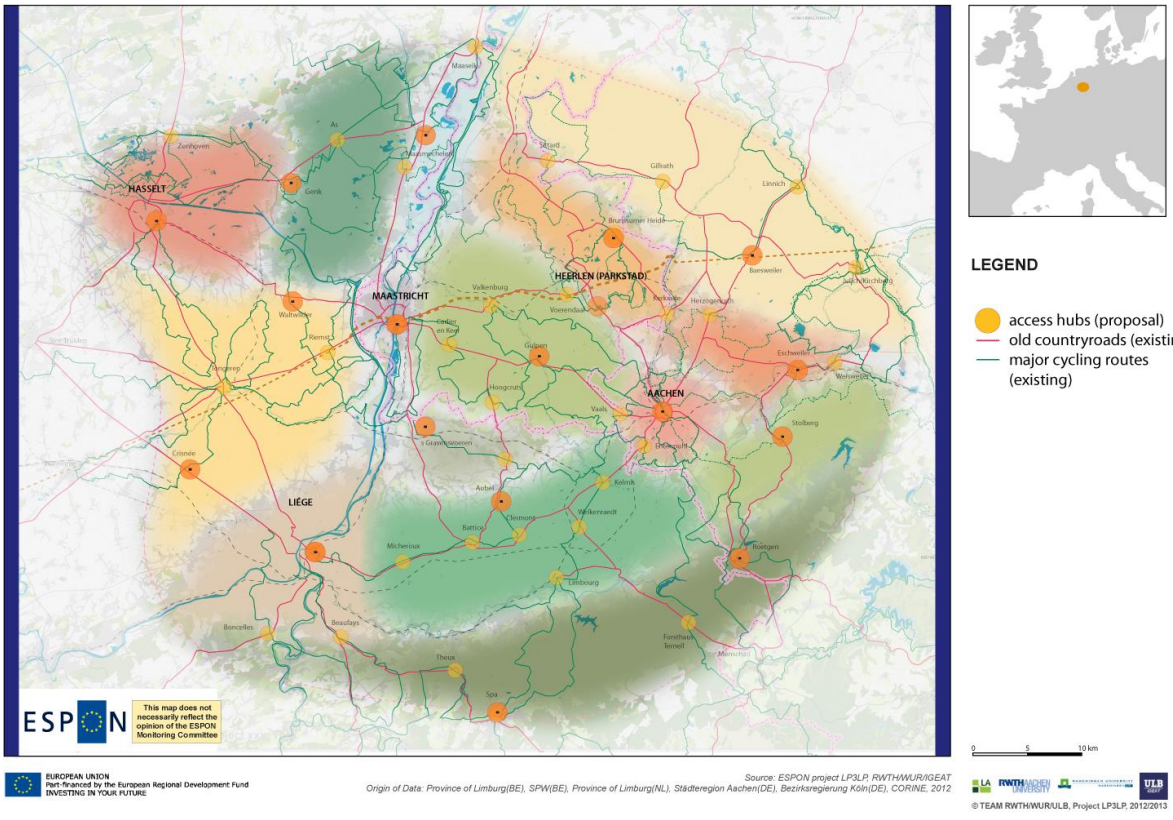
As a starting point not only for this strategy, but also serving the green infrastructure strategy, we recommend to develop a pilot project "A landscape information platform for the Three Countries Park" consisting of two basic elements: (1) a web-portal including various apps for target groups and (2) an interactive 3LP exhibition and public event touring the different landscape identity areas (e.g. two areas per year). Starting small and growing big, the knowledge base of both elements should at least collect:

1. Basic mapping in layers (→ ***understanding the landscape***)
2. Character profiles (→ ***identifying with the landscape***)
3. Value-creation profiles based on public perception combined with expert evaluations of ecosystem services (→ ***appreciating the landscape***)

[14] With regard to the blue-green principle of afforestation on steep slopes it may be considered to further develop hiking paths along the contours of slopes at the running edge between forests and open fields/pastures to further allow for wide and fascinating views.

4. Touristic info for most symbolic 3LP sites linked to European epochs and for existing and emerging innovative quality landscape projects
   (→ ***valorizing the landscape***)

Point 1 and 4 may 'just' require a synthesis of knowledge and data from past projects in a form attractive to the public. Point 2 and 3 will probably involve further studies, which however will be critical for green infrastructure planning as well. Thus, the landscape information platform could actually be part of a green infrastructure project both as a basis for integrative planning as well as a tool for public participation and mainstreaming across sectors. Further European resources may be available under regional development programs, especially if involving smart specialization, the information technology sector and the cultural and creative sector (e.g. landscape architects, artists and communication specialists etc.) (Working group of EU, 2012). With regard to rural development, the measure "basic services and village renewal in rural areas" offers support for studies and investments in improvement of local basic services including leisure and culture, recreational infrastructure and tourist information as well as maintenance, restoration and upgrading of the cultural and natural heritage of villages and rural landscapes (see Scientific Report, Table 13 "EAFRD measures", p. 133). ***Partnering with municipalities, tourism agencies and local development agencies*** will be critical.



Map 6 Showing major elements of the 'cultural heritage and accessibility strategy'

image source: www.swisstopo.admin.ch | image source: http://www.turbulenz.info/banner5.jpg | image source: Lehrstuhl Landschaftsarchitektur/RWTH

Figure 17 Impressions related to (left) the landscape information platform, (middle) interactive 3LP exhibition and public event, (right) new physical access hubs in the 3LP area

Such an overarching cultural heritage and accessibility strategy can help channeling financial resources into municipalities. In turn, a mutual partnership contract could contain a map and list of designated 3LP heritage sites, viewsheds or sensitive areas (e.g. on steep slopes, within valley floors or around castles etc.) per municipality, to be recognized by local zoning plans. .

4.3.3. Complementary biomass strategy (see also Scientific Report, IV.2.4, p. 147)

The EU strongly promotes the use of bioenergy, especially biofuels, in the course of climate/ energy and rural development policy. In this respect, it is often criticised that biomass production for bioenergy use threatens food security and biodiversity, and simplifies the landscape, e.g. by growing maize and rape monocultures, besides various other environmental impacts. However, biomass production systems based on a much wider variety of (especially perennial) energy crops and land use systems can also enrich the landscape and deliver positive environmental effects. From a technical perspective even a small share of bioenergy can provide valuable energy storage capacity within a regional renewable energy mix. In this sense we propose to develop a complementary biomass strategy adding further beneficial elements to the green infrastructure and cultural heritage strategy, while opening up diversified income sources for farmers as well as opportunities for innovative technologies and entrepreneurial services. "***Complementary biomass strategy" means to strategically introduce suitable bioenergy crops, practices and techniques into a landscape's land use system with the purpose of improving ecosystem services and landscape quality*** (Brüll, 2013)[15]. Traditional and innovative practices like agro-forestry, contour hedges, permanent grassland, and short rotation plantations, for example, do not only produce biomass resources, but can also retain water, prevent erosion, treat waste water, provide habitat and create attractive landscape features, etc. They can be integrated with systems for food production and thus ***do not necessarily compete with but complement agricultural production***. The maintenance of alleys and roadside vegetation may form additional, yet largely unused, potentials as well as the use of residues. In contrast,

[15] An overview of bioenergy related EU policies as well as a full elaboration of the complementary biomass approach and various exemplary case studies can be found in that PhD study.

mobilizing bioenergy sources from forests seems limited in the 3LP, as this would actually compete with the well-established timber industry already using much of the wood potential. Furthermore, biomass use from protected areas or valuable brownfields should be prohibited; except it clearly improves their maintenance according to their protection goal (e.g. use of grass cuttings from protected grasslands).

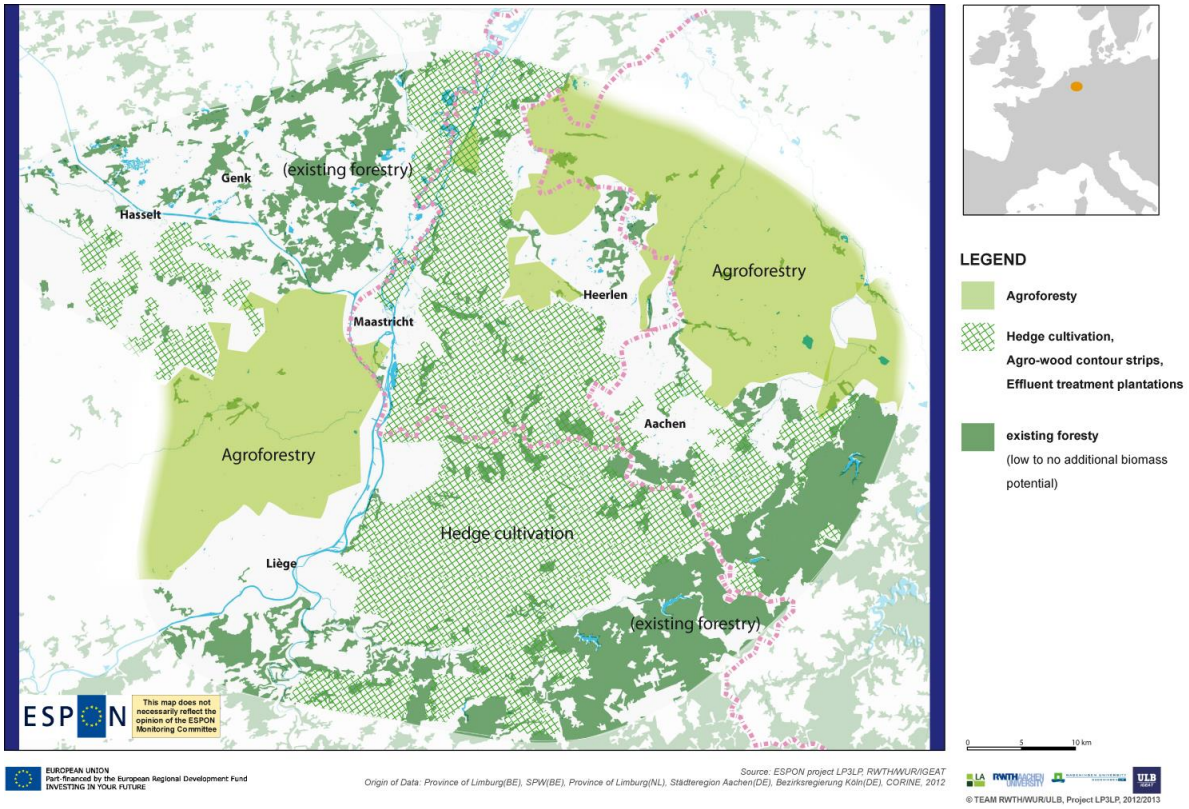
The advantage of an economically viable bioenergy use of traditional and innovative green infrastructure elements is that it ***can reduce public costs for landscape maintenance*** (e.g. payments for hedges) or advanced waste water treatment and such, in the future. However, since many complementary practices in combination with innovative conversion technologies are not ready for the market yet, it is proposed to test this strategy in a pilot project before upscaling the results upon feasibility to a regional scale.

A pilot project "Complementary biomass production in the 3-Countries-Park" based on field experiments could comprise the following ***biomass sources and green infrastructure elements*** relating to the guiding principles 1-7:

- Mixed cuttings from (restored) alleys, hedges and strip lynchets as well as new hedges or agro-wood strips planted along contours
- Grass cuttings from permanent grassland not used for livestock or hey production, e.g. grassed waterways, residential lawns and meadows or even golf courses (eventually involving entrepreneurial mowing services)
- Wood chips and reed pellets from short rotation (e.g. willow) plantations and constructed wetlands for wastewater/ effluent, drainage water or storm water treatment
- Wood logs/ chips from agro-forestry systems including standard orchards
- Use of manure and residues (protecting the landscape and waters from smell and eutrophication)

While e.g. methanization of manure and maize is a proven technology, conversion of grass and reed cuttings or mixed branch and leave cuttings are still under development. We therefore recommend analyzing innovative case studies (such as the INTERREG project WAllIS in the German-Dutch Euregio developing a hedge management system for bioenergy use or the Geotexia Mené cogeneration plant aimed at protecting the bocage landscape in Brittany); and establishing ***partnerships with competence and research centers***, such as for example the Holzkompetenzzentrum Rheinland, the Bioeconomy Science Center or the Fuelcenter at RWTH Aachen University on the German side (for references see Scientific Report, p. 148). ***Smart specialization*** and the EU research & innovation program Horizon 2020 are relevant instruments. ***Partnering with (regional) energy suppliers, bioenergy agencies and agricultural advisory services*** is recommended, especially to provide interested farmers and other entrepreneurs with the necessary security of investments (e.g. long-term-contracts). Further European support is most likely to be found under programs of regional and rural development. The rural development measure "*investments in the creation, improvement or expansion of all types of small scale infrastructure, including investments in renewable energy*" (European Commission, 2011i, Art. 21 (1b)) offers support in this regard. However, whilst rural development programs act within national regions, the European Innovation Partnership

(EIP) for Agricultural Productivity and Sustainability offers ***opportunities for cross-border activities*** (ibid, Art. 61-63; European Commission, 2012a, p. 6). The 3LP initiative may investigate the option to establish or take part in an "*operational group*" of the "*EIP network facility*" under the priority area "*Innovation in support of the bio-based economy*" (ibid. 7p) for the pilot project 'Complementary biomass production' as well as under the priority area "Biodiversity, ecosystem services, and soil functionality" (ibid.) for the pilot project 'Payments for transboundary ecosystem services' as suggested in the quality production strategy following below.



Map 7 Showing major elements of the 'complementary biomass strategy'

image source: www.bioenergie.fnr.de | image source: www.montpellier.inra.fr | image source: www.nabu-mkk.de/id_nabu/hecke1.jpg

Figure 18 Impressions related to (left) new or restored hedges and agro-wood strips, (middle) agroforestry within open fields landscapes, (right) landscape and habitat maintenance

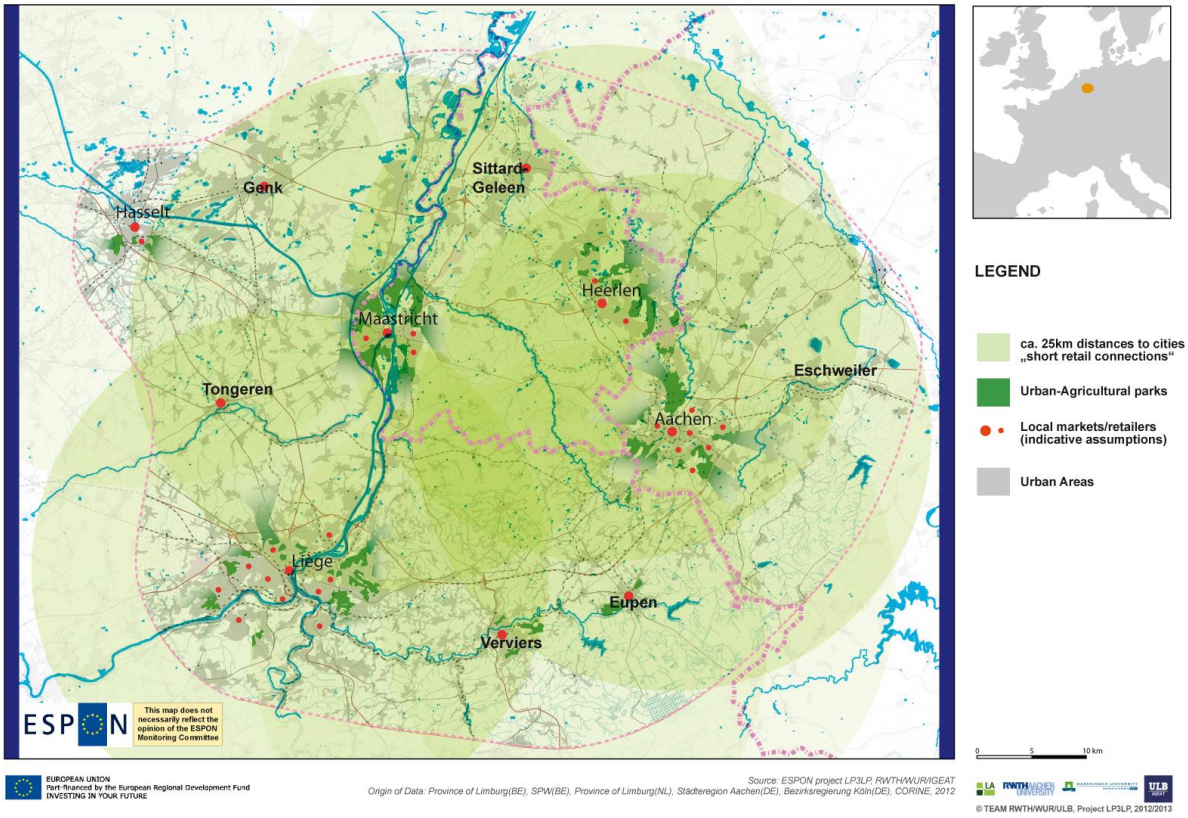
4.3.4. **Quality production strategy** (see also Scientific Report, IV.2.5, p. 149)

Attractive cultural landscapes are in many cases a result of locally adapted traditional farm structures and farming practices (Pinto-Correia *et al.*, 2006). Various changes like technological innovations and globalization of the market have rendered traditional systems uncompetitive. This often involves landscape change due to the need of increasing farm size, productivity and yields (see Chapter 2.2.2, first dynamic of 4 described). This is also the case in the 3LP. The guiding principles of '(re)development of hedge structures, strip lynchets and standard orchards', for example, specifically relate to traditional, locally adapted farming practices, which today are not competitive anymore and are therefore often given up by farmers. However, ***agriculture is still to be considered the main actor in maintaining 'open landscapes'*** while facing increasing societal expectations, risks, administrative burden and the need to proof compliance with environmental and sustainability standards. Since the global market does not honor non-commodity outputs of farming activities other incentives need to be found to compensate farmers for supplying public goods such as desired landscape characteristics and qualities. Internationally, payments for ecosystem services (PES-schemes) are discussed. The public consultation during CAP reform also reveals that many stakeholders and the general public think that farmers should be rewarded for additional public goods they provide beyond food security, such as environmental services, biodiversity, and tendering the landscape (European Commission Agriculture and Rural Development, 2010). However, fully binding direct payments to the delivery of environmental and landscape services could not gain political acceptance yet. Nevertheless, under the second pillar of CAP, the EU offers water-framework-directive payments, agri-environment-climate payments and forest-environmental/ climate services payments, and promotes the participation of farmers in quality schemes as measures of rural development (see Scientific Report, IV.2.5, p. 149). The use of these instruments for a long-term quality production strategy should be investigated, with the aim to ***encourage and support farmers to simultaneously co-produce high-quality (food) products and quality landscapes***.

We recommend developing a pilot project "Payments for transboundary ecosystem services" within three different landscape identity areas or small watersheds of the 3LP. The pilot project would test the use of different funding sources to compensate interested farmers and foresters etc. for implementing practices for water retention, water quality production, habitat creation, and public access (e.g. foot paths, gates), etc. on their land beyond legal requirements. These actions may comprise landscape features promoted by the green-blue framework and green infrastructure, but can also stretch further over the arable land area such as no till practices. Away from intensification with the purpose of maximized yield this will provide incentives to diversify and improve production practices towards a true ***multifunctional output***. Existing channels of ***cooperation between the competent authorities, agricultural advisory services and research institutions*** of the 3LP should be used or further linkages established for mutual knowledge exchange and innovation. With regard to financial resources, in the best case, a part of an already established 3LP Fund can be dedicated to quality production. Otherwise different sources have to be found e.g. from identifying beneficiaries of these services. An inventory should be made on whether and how the abovementioned payment opportunities from the

EAFRD Fund are programmed in the national/regional programs of the three countries, and whether and how they could be used for such a pilot project. A first step would be to investigate how to set up such a PES-scheme by learning from best-practice guides and international case studies (see Scientific Report, IV.2.5, References under p. 150). Such a scheme may also involve knowledge transfer, life-long learning and vocational training – another EU investment priority – for the increasing future responsibilities and tasks of farmers as energy, water and service providers beyond their primary role of 'feeding the growing world population'. As mentioned above, connecting with the European Innovation Partnership for Agricultural Productivity and Sustainability, which intends to provide support for a ***knowledge based agriculture*** (European Commission, 2011i, Title IV) could be promising.

A possibility for enhancing quality of life in urban and suburban areas through "*integrated urban management*" (EEA, 2009) may be the designation of urban agricultural parks: Agricultural ensembles at the fringes of cities hold special economic potentials, because of their proximity to urban consumers of food, recreational- and social services. Due to its polycentric settlement structure, the 3LP contains many examples of this situation. To harness this potential, it is proposed to promote urban agricultural parks as ***interest alliance*** between farmers and urban citizens. A motivation may be the common desire ***to prevent fertile soil and green open space from increasing land-take and soil sealing***. The parks could further serve as experimental ground for alternative business models offering 'urban agricultural services' like do-it-yourself gardening, therapeutic work, or agri-educational training at schools etc. Urban agricultural parks could also exist as ***designated elements of an urban green infrastructure network***.



Map 8 Showing major elements of the 'quality production strategy'

Figure 19 (left) Promoting water quality as a paid-for ecosystem service, (middle) urban-agricultural parks (existing example Pferdelandpark Aachen), (right) regional quality labels based on different cultural identities in the 3LP

A long-term option is the development of a regional 3LP quality scheme based on international standards and contributions of individual producers to ecosystems services and specific landscape quality objectives. Such an option will become increasingly important with regard to the trend of expanding sustainability standards from biofuels to all agricultural products (Brüll, 2013). As a first step an inventory of existing regional labels and quality schemes together with an investigation of barriers of previous attempts to promote regional quality products should be conducted. A voluntary quality scheme would offer its participating producers competitive advantages of group certification and ***promotion in the regional cross-border market*** e.g. by involving food-processors, retailers and green public procurement on a long-term contractual basis. However, we do not recommend developing a 3LP brand, but instead ***using the different local landscape identities and most symbolic core qualities*** (e.g. Pays de Herve and bocage image) for branding compliant products under the 3LP as an umbrella. The EU offers support for new participation by farmers in quality schemes as a rural development measure (European Commission, 2011i, Art. 17) with the aim of "*better integrating primary producers into the food chain*" (ibid. Art. 3a). The 3LP scheme however, ***may also apply to other land uses and their products*** than agriculture, ***such as forestry, tourism, aquaculture*** etc. Since setting up a certification system is very complex, a more simple option could be to label products from producers showing high commitments and performance regarding ecosystem services and landscape quality with a '3LP stamp' combined with promotional campaigns.

4.4. Synergies and conclusions

The landscape perspective and thematic strategies complement each other and offer synergistic effects. They attempt to cover main ambitions of the 3LP initiative of maintaining and enhancing an attractive multifunctional cultural landscape, by e.g. diversifying agriculture in sensitive areas into the direction of regional quality products, recreational services or water and nature management, by enhancing access to cultural heritage, addressing diffuse urbanization, connecting habitat areas and improving water retention capacity and water quality etc. (Projectgroep Drielandenpark *et al.*, 2003, pp. 41–59). These topics are also important EU ambitions.

The topics climate and energy were added to the 3LP agenda in this project, since they will have major effects on landscape and have a high priority in EU policy. The present representatives of the stakeholders regard energy until now not as their main competence, but recognize, however, the impact from renewable energy on landscape. As bioenergy has the closest link to landscape and can support green infrastructure in a

complementary way, this field may serve as an entry point to also deal with other forms of renewable energy from a landscape perspective in the future.

The presented policy proposals are in large parts coherent with findings of the 'Destreé study' investigating the potential future of the Three Countries Park (Cutsem and Demulder). Specific overlaps are indicated in the tables in the Scientific Report (Tables 14 – 18 pp. 140-149). Van Cutsem and Demulder equally highlight the appraisal, that '***landscape'*** – handled in a dynamic and future oriented way – ***can serve as a common denominator for challenges of the 21st century like sustainable development, energy, climate change and urbanization*** (ibid, 11). We share their opinion that the 3LP initiative should further deepen this core competence and work towards local and international recognition of this innovative dimension of its landscape approach.

5. European landscapes providing values and context for EU policy: Recommendations at European level

The previous recommendations at regional level give advice how selected European instruments can be used in regional landscape policy (i.e. for the integral development of spatial/ landscape functions) and in particular for the implementation of the 3LP landscape perspective. The recommendations targeted at European level described in the following address potential impacts of EU policy on the quality of 3LP and other regional landscapes, linked with the questions of how investments in landscape can support European Union policy, and how a landscape approach could be strengthened by EU policy. To approach these questions, the hypothesized interpretations of landscape (1) as asset, (2) as place, and (3) as common ground (Chapter 2.2.5), representing ***pairs of risks and chances*** in the European policy context, have been discussed in a meeting with international landscape science and policy experts (see Scientific Report, IV.3.1).

5.1. Landscape as asset - enabling smart, sustainable, and inclusive regional development

European regional/ cohesion policy is oriented towards economic growth and job creation (European Commission, 2011b). Growth is supposed to be smart, sustainable and inclusive (European Commission, 2010a). However, the headline targets measuring success (ibid. 10p) do not include any landscape values. This principally bears the ***risk of growth at the cost of landscape degradation***. On the other hand an understanding and ***recognition of value-creation in landscapes*** – both commodified and non-commodified – ***is a chance for a balanced territorial development***. As mentioned in Chapter 2.1.2 landscape functions, services and quality objectives are suitable concepts to describe these processes of value-creation and -assignment and to link various landscape features to smart, sustainable and inclusive growth:

- Carrier/ production functions and provisioning services provide site, energy and material resources as classical production factors.
- Regulating services continuously deliver favorable living & production conditions (e.g. fertile soil, flood protection, reliable climatic conditions, etc.) as the basis of sustainable growth.
- Cultural services actually recreate human capital, namely healthy human labor force, but also smart capabilities, such as concentration, inspiration and motivation etc. They are an important component of cultural identity and support social relations. Thus, they largely contribute to smart & inclusive growth (Brüll, 2013).

While site, energy and material resources are clearly involved in any economic activity, the contribution of the other services is less obvious, but equally important. Essentially, ***regulating and cultural services provide the 'reproductive sphere' of economic production and consumption*** and therewith enable any territorial development (Brüll, 2013) based on (Biesecker and Hofmeister, 2006, 2010). Furthermore, as indicated by the political landscape demands in Table 2 (p. 24), an integrated management of ecosystem services within a context of quality landscapes can highly contribute to the achievement of various European policy objectives.

The 3LP ***landscape value chain*** in the Scientific Report (Figure 34, p. 135) illustrates how the 5 core qualities, representing characteristic and appreciated landscape features in a spatial pattern yield exemplary services and various ***commodified and non-commodified values***. However, a conceptual gap was experienced in the project between the two political agendas of landscape quality objectives (ELC) and landscape functions/ ecosystem services (EU), requiring further research (compare Natural England, 2010, p. 43; Natural England, 2009, pp. 42). It is unclear, for example, whether and how to link the concepts within one landscape policy or to address them separately; whether LQOs only fall into the cultural services realm or can be also associated with other services (e.g. regulating/habitat). Further questions are whether landscape quality objectives could be part of the EU political goal of improving environmental quality (TFEU, 2010, Art. 191(1)) or whether environmental quality objectives, like the good status of water (European Parliament and Council of the European Union, 2000, Art. 4(1)), may also be set for other ecosystem services as targets for cross-cutting landscape policies. The 20/20/20 energy and climate target for sustainable growth (European Commission, 2010a, pp. 10) in any case does *not* adequately represent sustainable development of regions and their landscapes (compare ESPON SIESTA, 2012). Therefore the development of a "dashboard of indicators" including indicators on ecosystems and natural capital is announced (European Commission, 2011k, p. 21), see also (European Commission, 2013b).

While Europe 2020 does not account for landscape values, the Territorial Agenda 2020 recognizes them in priority 6: "Managing and connecting ecological, landscape and cultural values of regions" (TA 2020, 2011, §(37)-(38)). Thus, the newly introduced political goal of "territorial cohesion" (TFEU, 2010, Art. 174) may serve as an entry point for a ***stronger consideration of landscape in territorial development and cohesion policy***. However, often there is a resistance against a landscape approach, since 'landscape' in the political arena is mostly perceived as a conservationist heritage concept hindering economic development.

Recommendations:

- Recognize 'landscape' beyond an aesthetical & heritage concept as the physical and visual expression of territory and peoples' living environment, applying to the whole territory including outstanding, ordinary and degraded landscapes as promoted by the European Landscape Convention
- Dedicate a focal research area to the linkages of landscape quality objectives with ecosystem services/ landscape functions and smart, sustainable, inclusive regional development;
- Consider within the dashboard of indicators ecosystem service indicators in relation to (regionally defined) environmental/ landscape quality targets
- Concerning CAP: Extend the 7% ecological focus area also on permanent grassland as habitat connectivity is also required in grassland landscapes (e.g. Pay de Herve in the case of 3LP); consider linking direct payments even further to the provision of public goods, especially regulating, cultural and habitat services.

5.2. Landscape as place – setting the scene for place-based policy implementation

The Territorial Agenda promotes a ***place-based policy approach*** to build on specific regional potentials and to avoid 'territorially blind' standardization (TA 2020, 2011, pp. 11–12). Standardization is an intrinsic principle of EU policy. Creating equal conditions for its citizens and the internal market lies at the heart of the European Union. There are many useful aspects of standardization in a cross-border context: The standardized process of the Water Framework Directive, for example, synchronizes work across borders and makes quality judgments comparable. The Natura 2000 areas of the Habitats and Birds Directive were found in this project to be the only equal protection categories; all others differed substantially and lacked interpretation with regard to international IUCN criteria (see Natural heritage map in Map Atlas, p. 21). Thanks to the Urban Wastewater Treatment Directive a newly built treatment plant for the city of Liege in Belgium allows fish species to return and people to canoe again in the Meuse River downstream in the Netherlands (as students could realize in a summer school associated with this project). However, there is also the ***risk that standard setting policies create uniform landscapes***, especially if a single output or technology is rewarded or promoted as experienced with the former CAP and may further be experienced with the promotion of biomass/ bioenergy production. Therefore mechanisms are needed that can translate standardized policies into place-based solutions.

Landscape is a place or a composition of places with a unique setting and distinct character. So it ***has the potential to serve place-based approaches*** and to provide the concrete 'spatial-temporal matrix' for the implementation of standardized policy objectives and principles with a territorial dimension. Vice versa, the place-based territorial policy approach seems conducive to the development of diverse quality landscapes. However it still appears 'fuzzy' to policy outsiders (Böhme *et al.*, 2011).

Recommendations:

- Develop a guidance document for the place-based policy approach with a focus on landscape
- Encourage the inclusion of landscape analysis in territorial analysis for evidence-based policy
- Provide support for mechanisms contextualizing standardized policies within the scope of regional/ cohesion policy
- Enhance standardization of geographic data generation on regional to local scale – and guarantee free data access for non-commercial uses on basic topics such as relief and soil, water system, land cover/ use, infrastructure and production, natural/ cultural heritage, property regimes

5.3. Landscape as common ground – facilitating territorial cohesion

Traditionally, European Union policy is of sectoralized nature as member states via European treaties transfer specific competences to the European level in a historic process. There are several efforts to coordinate various policy actions, e.g. the flagship initiatives. However, multilevel processes of breaking down European policies to the local

scale bear the ***risk of a one sided implementation of sectoral policies*** in a non-integrated manner, which may cause land-use conflicts and trade-offs between various landscape demands. In light of the recently introduced policy goal of territorial cohesion the need to horizontally integrate sectors, to vertically integrate levels across scales and to territorially integrate functional units is stressed (Böhme *et al.*, 2011, pp. 23–27).

Although landscape conceptions may vary, it becomes obvious when looking at landscapes, that basically ***all land uses and their sectors are (to be) involved***. Furthermore, the landscape provides a sense of belonging and local-regional identity. It therewith contributes to social and territorial cohesion and the "*consolidation of the 'European identity'*" (Council of Europe, 2000, preamble). Thus landscapes offer a ***chance, to facilitate territorial cohesion*** especially in a cross-border context. However, there are still many barriers to vertical, horizontal and territorial integration, e.g. too much focus on competition rather than on complementarities, a lack of facilitating and coordinating capacity, and the requirement of comprehensive transdisciplinary and synthetic knowledge and skills. Another point often mentioned by stakeholders and experts is the desire to work in continuous processes rather than in '3-5-year-projects' for which European funds are available.

Recommendations:

- Encourage cooperative mechanisms and training activities which closely link regional development to landscape policy within the scope of regional/ cohesion policy;
- Consider setting up a landscape policy knowledge & exchange platform as a joint operation with the European Landscape Convention
- Extend the scope of area-based tools to 'integrated regional landscape development'; provide for a collaborative and coordinated design and implementation of agri-environment-climate schemes (Prager *et al.*, 2012).
- Take further the soil framework directive – as it represents a missing piece in environmental legislation – relating soil functions to ecosystem services and spatial/ landscape functions.

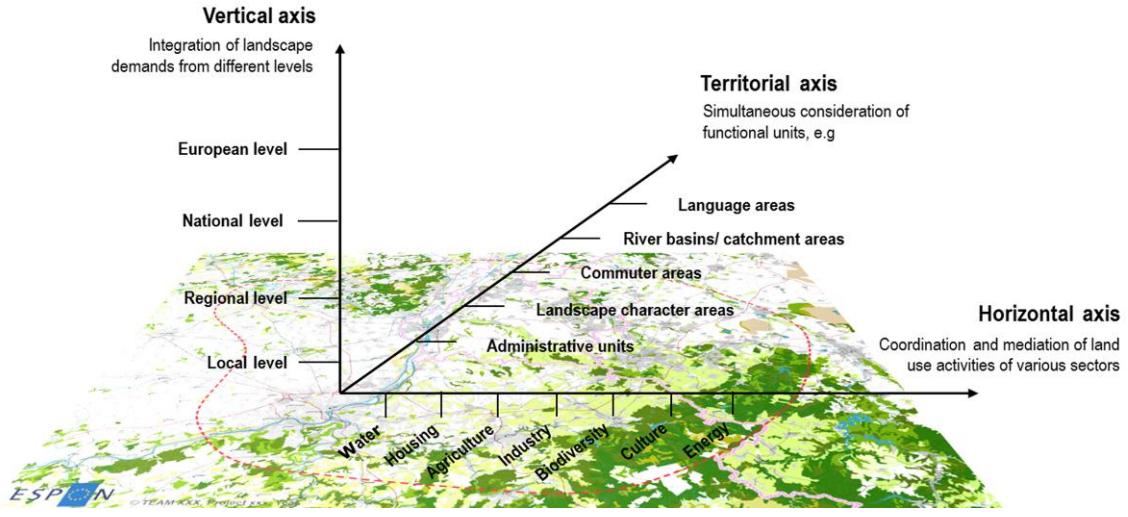


Figure 20 Vertical, horizontal and territorial integration via landscape management *(Source: own elaboration)*

6. Conclusions and transferability

6.1. EU/European level – cross-border level – 3LP area

How can local aspirations for 'quality landscapes' become addressed, while at the same time contributing to the EU objectives of smart, inclusive and sustainable growth and territorial cohesion? Yet not fully utilized potential has been demonstrated regarding theoretical concepts: the definitions and aims by the ELC, ecosystem services, etc. linking landscape core qualities with the strategic policy level. Particularly, the 3LP's 'landscape perspective' in combination with the thematic policy proposals – may offer an inspirational model for other regions. By focusing on landscape, the project reflects at the same time 3 major paradigms within EU cohesion policy (as e.g. outlined in the Territorial Agenda 2020):

1. First, regional value needs to be assessed at more detail, e.g. by developing core qualities into regional 'quality landscapes' beyond mere considerations of heritage and aesthetics, and to support this via new research areas/indicators at European level that keep up with already high demands to landscapes all over the continent by EU policy. Landscapes – understood as both physical and visible expression of territory and environment – and their ecosystems provide not only site and resources as classical production factors, but also the 'reproductive' conditions of economic activities. Therewith landscapes, their functions, qualities and values lay the basis for any territorial development. The maintenance and management of quality landscapes therefore is not only of cultural and ecological, but also economic concern.

2. Second, further development of more place-based solutions is needed, as this project shows e.g. by revealing the case study's embedment into 4 territorial dynamics, that are linked with the tailor-made policy strategies proposed for the 3LP region. As shown in the previous chapter European landscapes hold major potentials not only for quality of life of local people but also for a place-based pathway of policy integration.

3. Third, these goals can only become achieved through horizontal-vertical-territorial integration[16], as the LP3LP proposal regarding a future '3LP landscape partnership' suggests (that could form one of many within a European network). In support of such ideas, the Territorial Agenda 2020 and the political goals of improving environmental quality and territorial cohesion offer various entry points for a stronger consideration of landscape in EU policy. Especially area-based tools of cohesion policy may be further expanded to support integrated approaches to landscape development.

[16] or "horizontal coordination", "integrated functional area development" and "multilevel governance" as usually referred to within cohesion policy

How can European funds and regulations better be used or improved to implement regional landscape policy (e.g. the landscape perspective for the 3LP)? This project provides both a set of concrete policy recommendations targeting EU policy makers in relation to the points 1-3 just listed above. Usually, place-based landscape approaches seem largely neglected, often still in the shadow of more generic classical-economical or technological approaches. Apart from recommendations at EU level, the LP3LP provides a scan of a broad width of EU policy instruments and is aligned with them (where meaningful) in its thematic strategies.

6.2. Cross-border level – 3LP area

What is the identity of the 3LP as a cross-border region within Europe? To which European cross-border regions are the landscape perspective and policy recommendations of the LP3LP transferable? The 3LP's identity is to a large degree influenced by European dynamics that are also affecting many other regions. Especially three other cross-border regions - Vienna-Bratislava (AT-SK-HU), Lille metropolitan area (FR-BE) and the Greater Region/LU-DE-FR-BE - have been highlighted as to some degree comparable, also since they tackle the resulting regional challenges and potentials with landscape policy. Regarding the latter, the 3LP area appears as one among the pioneers within Europe: Its message is yet to be heard at the EU level, to be brought into closer exchange with other regions, and eventually also to be developed further internally, e.g. by more involvement of municipalities and public participation. For these steps, the LP3LP project can offer only one of many necessary ones.

How can, in a cross-border setting with different landscape approaches, a shared landscape policy be developed? Despite commonalities, all cross border regions are experiencing also their own territorial dynamics and have their specific landscape characteristics and potential. The relevancy of a direct transferability of the present document is therefore difficult to determine. Nevertheless, other cross-border regions (and especially those already identified) may consider the following steps, arranged in vaguely chronological order:

1. Position the territory in a EU territorial context in order to define the large driving forces of landscape change;
2. Harmonize the geographical data;
3. Take stock of the existing landscape capital and define core qualities;
4. Develop guiding principles based on qualification of the above;
5. The overall approach of the LP3LP landscape perspective may be transferred to other (cross-border) regions;
6. Identify existing organizations active in the landscape and their specific field of intervention;
7. Think of potential strategies, and validate them by (thematic) experts;
8. In this relation, the general approaches of the 4 thematic strategies of the LP3LP may be transferable (e.g. the Green Infrastructure strategy and its unifying effect or the complementary biomass approach);
9. Link strategies with existing EU policy documents and funds. In this relation, the findings of the LP3LP project are largely transferable.

6.3. 3LP area

What are the core qualities of the 3LP? The LP3LP project has identified a diversified relief, an abundance of water appearances, a varied green character, a polycentric settlement pattern and a manifold cultural heritage. Their heterogeneous patterns are shown in the Atlas of Maps.

What are the general implications of the established European identity of 3LP for the development of landscape policy of 3LP? It has been already mentioned, that the 3LP is a forerunner of innovative cross-border landscape policy within Europe. Apart from this, climate change adaptation and mitigation, being one of the 4 European-wide dynamics highlighted in this report, is a yet not fully considered topic under the initiative's umbrella. Due to its rising relevance, among other questions regarding resource consumption and resulting externalities, it is addressed in the landscape perspective (e.g. guiding principles that reduce flooding or soil erosion) and the thematic strategies (e.g. the 'complementary biomass strategy').

What is the design of a future landscape perspective that preserves and develops the core qualities and their patterns? And which recommendations can be made for the development and coordination of spatial functions?

The landscape perspective for the 3LP landscape, presented in this report, envisions three clear outcomes:

1. it enhances the characteristics and core qualities of the landscape,
2. improves and expands its ecosystem services,
3. and makes the landscape more robust and resilient to future change.

The landscape perspective is defined on a regional scale, providing opportunities for detailed, tailor-made and culturally embedded local solutions in landscape planning/ design, protection and management. The landscape perspective synchronises landscape objectives – developed in previous and existing landscape studies - and objectives related to a cross-border ecological network; and creates a shared set of guiding principles, which may be understood as regional landscape quality objectives on a joint level of scale and abstraction. Local examples illustrate how the guiding principles can lead to place-based solutions on a detailed scale, taking cultural identities and landscape specifics into account. This will enhance the distinct character of the local landscapes as well as their spatial functions especially with regard to habitat, water management, climate adaptation, and recreation etc. Nevertheless, solutions found in one part of the 3LP may be transferred to other parts of the 3LP with similar characteristics. In any case mutual learning from the different mentalities, perspectives and approaches in the three countries will be very fruitful. Successful implementation or good performance of the Landscape Perspective relies on support from local, regional and national authorities, and involvement of stakeholders and local initiatives.

7. Further work and research

Dissemination LP3LP:

2014, May: Along with planning the final public dissemination event of the project in 2014, the lead stakeholder and the TPG will publish a brochure that can convey the LP3LP project in a summarized and simplified form to a broader public (incl. politicians). Other dissemination activities including a regional exhibition and a scientific paper are currently under preparation (see Scientific Report V.6).

First steps for regional implementation:

For the stakeholders, next steps are suggested as follows:

- 2013/2014: communicate the LP3LP landscape perspective, proposed updates in form of the '3LP landscape partnership' approach and the 4 thematic strategies (See above under "dissemination")
- 2014: Discuss the landscape perspective and the necessity to implement strategies developed in the present document. In this regard, confirm whether a start with the 'green-blue framework' and a) the 'Green Infrastructure-' and b) the 'Cultural heritage and access strategy' can be agreed upon. Projected implementation measures are to be aligned with existing landscape features, with relevancy of guiding principles varying according to local context.
- Regarding above: Apart from the necessity to integrate local initiatives and organisations willing and able to contribute to positive effects on landscape development, a process including public participation may form the most effective way to legitimate choices.
- 2014-2016: the landscape information platform (an element of the cultural heritage and access strategy) and eventually a process to define landscape quality objectives could offer additional support.
- 2014: Call for projects (i.e. the strategies or parts of them) by the 3LP partnership (i.e. the Steering Group of the 3LP)
- End of 2014: Formation of "cross-border communities" per project
- Beginning of 2015: Applying for funding per project
- End of 2015: Project organization
- 2016: Pilot measures related to the new projects
- In parallel, investigate options for setting up a 3LP foundation or trust

Issues for further analytical work and research on a European scale:

From the EU perspective, further analytical work is to focus on how a landscape approach can be mainstreamed into regional and cohesion policy. Structures such as the 3LP, all over Europe, are working as a continuous observatory and actor of landscape. A way of facilitating the echo of their message to higher levels is to be found.

In this regard, the following points could mark a future research avenue and orientation for further analytical work under the ESPON program:

(1) Linking standardized concepts with a place based landscape approach: Research on how to coherently link concepts of ecosystem services, soil functions, spatial and landscape functions with environmental/ landscape quality objectives and means of landscape policy (including a review of LQO in different European countries) is urgently needed. Furthermore, research on how the distinctiveness and qualities of landscapes can support a place-based policy approach and territorial cohesion will be of high value. A focus should be set on cultural ecosystem/ landscape services representing deep human aspects which are presently not well recognized in EU policy. Especially how cultural services regenerate human and social capital and contribute to smart and inclusive growth deserves much more political attention and scientific investigation.

(2) Landscape monitoring for territorial analysis and evidence-based policy making: *Indicator based* landscape monitoring between demand and supply will be essential for a successful management of ecosystem services and 'quality landscapes' as well as to avoid costs of land(scape) degradation. This will not be possible through one landscape indicator, but a set of indicators reflecting the performance of a spatial-temporal array of various landscape features, processes and ecosystems towards expectations and demands imposed on landscapes. As indicators need to be partly generic to allow for European wide assessments, and partly context-specific to allow for reflecting the local conditions, a standardized adaptive process creating landscape reference systems could be a solution (Brüll, 2013). The literature on landscape metrics, landscape quality indicators (including expert-led and perception based approaches), environmental indicators, ecosystem service and biodiversity indicators or indicators for the assessment of land degradation is vast and could not be analysed within the scope of this project. However, to develop an indicator set useful for managing quality landscapes as the foundation of smart, sustainable and inclusive territorial development would be highly desirable. Such a research activity in relation to EU efforts to develop an indicator base for sustainable growth and international efforts to develop ecosystem services indicators, as well as in relation to the type and availability of local and regional data and indicators for landscape quality objectives – may be the subject of a new Targeted Analysis within the ESPON program. This would complement territorial analysis, yet mostly dealing with socio-economic indicators, and benefit evidence-based policy making. The Three Countries Park may serve as an excellent testing ground for the feasibility of landscape monitoring.

(3) Integrated landscape-scale management of regulating, cultural and habitat services: Analytical work should concentrate on how the design of present farm- or field-scale measures like direct payments for ecological focus area or agri-environment-climate payments under the Common Agricultural Policy could be improved and complemented with regional measures for an integrated cooperative and place-based approach of managing regulating, cultural and habitat services on a landscape-scale.

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