

Research Article

Anja Brüll*, Timo Matti Wirth, Frank Lohrberg, Annet Kempenaar, Marlies Brinkhuijsen, Marie-Françoise Godart, Alain Coppens, Marc Nielsen

Territorial cohesion through cross-border landscape policy? The European case of the Three Countries Park (BE-NL-DE)

<https://doi.org/10.1515/cass-2017-0007>

received September 19, 2014; accepted July 18, 2017

Abstract: Landscapes can be understood as social-ecological systems under constant change. In Europe various territorial dynamics pose persistent challenges to maintaining diverse landscapes both as European heritage and in their capacity to provide vital functions and services. Concurrently, under the competence of cohesion policy, the EU is attempting to improve policy making by better policy coordination and respecting regional specifics. This paper explores the question how a policy dedicated to landscape can help to handle territorial change and support territorial cohesion. It presents results and performances of the ESPON applied research study LP3LP: (1) a common landscape policy for the Three Countries Park, across the Dutch, German and Belgium borders, including a spatial landscape vision, a governance proposal of adaptive landscape management, and thematic strategies dealing with green infrastructure, cultural heritage, complementary biomass and quality production; (2) recommendations at the EU level. In discussing the significance of a landscape approach

for EU policy, three dimensions of landscape are linked with *important aspects of territorial cohesion*: ‘landscape as asset’ addressing natural-cultural *territorial capital* as an indigenous base for *smart, sustainable, and inclusive development*; ‘landscape as place’ stressing the relevance of landscape for *place-based policies*; and ‘landscape as common ground’ highlighting its potential for *horizontal, vertical, and territorial integration*.

Keywords: Territorial cohesion; cross-border region; landscape; quality objectives, spatial functions, ecosystem services; place-based policy

Abbreviations

The following abbreviations are used in this article:

3LP: Three Countries Park (Drielandenpark/ Parc des Trois Pays/ Dreiländerpark)

CAP: Common Agricultural Policy

ELC: European Landscape Convention

EMR: Euregio Meuse-Rhine

ERDF: European Regional Development Fund

ESPN: European Observation Network for Territorial Development and Cohesion

EU: European Union

LP3LP (project acronym): Landscape Policy for the Three Countries Park

TA: Territorial Agenda

1 Introduction

Since its inclusion in the Lisbon Treaty in 2009 “territorial cohesion” is an explicit political goal of the European Union complementing the classical goals of economic and social cohesion [1, Art. 174]. It is a purposely undefined ambiguous concept, which is

*Corresponding author: Anja Brüll, Euregio Meuse-Rhine, Three Countries Park, Gospertstrasse 42, 4700 Eupen, Belgium, E-mail: anjabruell@euregio-mr.eu

Timo Matti Wirth, Frank Lohrberg, RWTH Aachen University, Chair of Landscape Architecture, Faculty of Architecture, Jakobstraße 2, 52056 Aachen, Germany

Annet Kempenaar, Marlies Brinkhuijsen, Wageningen University, Landscape Architecture Group, Droevendaalsesteeg 3, 36708 PB Wageningen, The Netherlands

Marie-Françoise Godart, Alain Coppens, Université libre de Bruxelles, Institute for Environmental Management and Land-Use Planning (IGEAT), 50 av. F. D. Roosevelt CP 130/02, 1050 Brussels, Belgium

Marc Nielsen, Terres en Villes, 40 avenue Marcelin Berthelot, CS 92608 - 38 036 Grenoble Cedex 2, France, Bureau parisien: 22 rue Joubert, 75009 Paris

mainly associated with two aims: 1) reducing disparities in the development of European regions, and 2) giving European politics a territorial (or spatial) dimension. The first aim expresses the ambition that people and firms should have equal conditions no matter where (in which territory) they live or are located in the European Union (e.g. with regard to income opportunities or access to basic services). The second aim highlights the aspiration that regions should be able to develop their indigenous potentials (in relation to exogenous factors) based on their territorial capital and geographic features [2-5]. It goes together with a place-based policy approach and the need for cooperation and coordination of sectoral policies (horizontal integration), of multiple levels (vertical integration) as well as of various functional areas across national and administrative boundaries (territorial integration) [3, 5, 6].

Both aims together reflect the principle of creating unity while maintaining diversity, which is key to European politics on a large scale and also present on a small scale in the Three Countries Park (3LP), a landscape area and collaborative platform in the heart of the Euregion Meuse-Rhine crossing the Dutch, Belgium and German borders. On the one hand, the landscapes of the 3LP show a common history and common characteristics as well as similar issues and trends of change. On the other hand, different territorial features like relief and soil types, a high cultural diversity, different mentalities as well as legislative and planning backgrounds also create a high distinctiveness and diversity of the landscapes. Both the common and varied landscape characteristics form an important part of the territorial capital of this cross-border region. Therefore the contributing partners of the 3LP share the wish to pursue a common landscape policy while maintaining diversity. The Three Countries Park may thus serve as an interesting case study in the sense of a ‘little Europe’.

Against this backdrop the ESPON Project “LP3LP – Landscape Policy for the Three Countries Park” was carried out in order to develop policy recommendations on the regional and European level. The paper presents results from this transdisciplinary research project [7-10], reflected upon the present activities of the 3LP and the ongoing debate about territorial cohesion. It explores the question how landscape policy – as promoted by the Council of Europe through the European Landscape Convention (ELC) [11] – can support cohesion policy, and vice versa whether the concept of territorial cohesion can be supportive to the management and development of diverse European landscapes.

2 Project approach and methods

The LP3LP project was conducted as a Targeted Analysis under the European Union’s ESPON 2013 Programme, which continues to serve as the European Territorial Observatory Network (ESPON 2020). The project lasted for a period of two years from 2012-2014. Besides the “LIVELAND” Project [12] it was one of the two first ESPON projects dealing with landscape.

The Three Countries Park denotes both a loosely defined project area situated at the core of the tri-national Euregion Meuse-Rhine (BE-NL-DE) and a cooperative stakeholder platform of presently 13 governmental partners from the field of regional development, spatial and landscape planning, environment and nature conservation. With its European orientation, national-regional planning backgrounds and the involvement of various local actors it represents itself a multi-level governance structure. The topic of ‘landscape’ here serves as a common denominator to reconcile different levels, competences and interests of the contributing partners (here called the stakeholders).

Within the LP3LP project, the stakeholders’ interest was to create a shared landscape vision integrating various spatial functions and responding to European challenges, while ESPON’s interest was to explore the meaning of a landscape approach for European territorial development and cohesion policy. In light of these broad aims the project’s objectives were threefold:

1. The examination of the 3LP’s European identity and dynamics based on previous ESPON studies (cf. Chapter 3.1)
2. The design of a spatial landscape perspective for the future development of the 3LP (cf. Chapter 3.2.1)
3. The development of policy recommendations at the interface between the 3LP landscape perspective and EU policy (cf. Chapter 3.2)

The LP3LP project was to provide policy support for both the 3LP stakeholder community and on the EU level. According to these objectives three research phases structured the project, iteratively alternating between the regional and European level: Phase A – analysis, Phase B – design, and Phase C – policy recommendations. The basic research approach is given in Figure 2, combining Phase B and C under “Proposals”.

We applied various qualitative transdisciplinary research methods of knowledge integration, e.g. clarification and relation of terms, categorical systems, metaphors, model building, normative research questions,

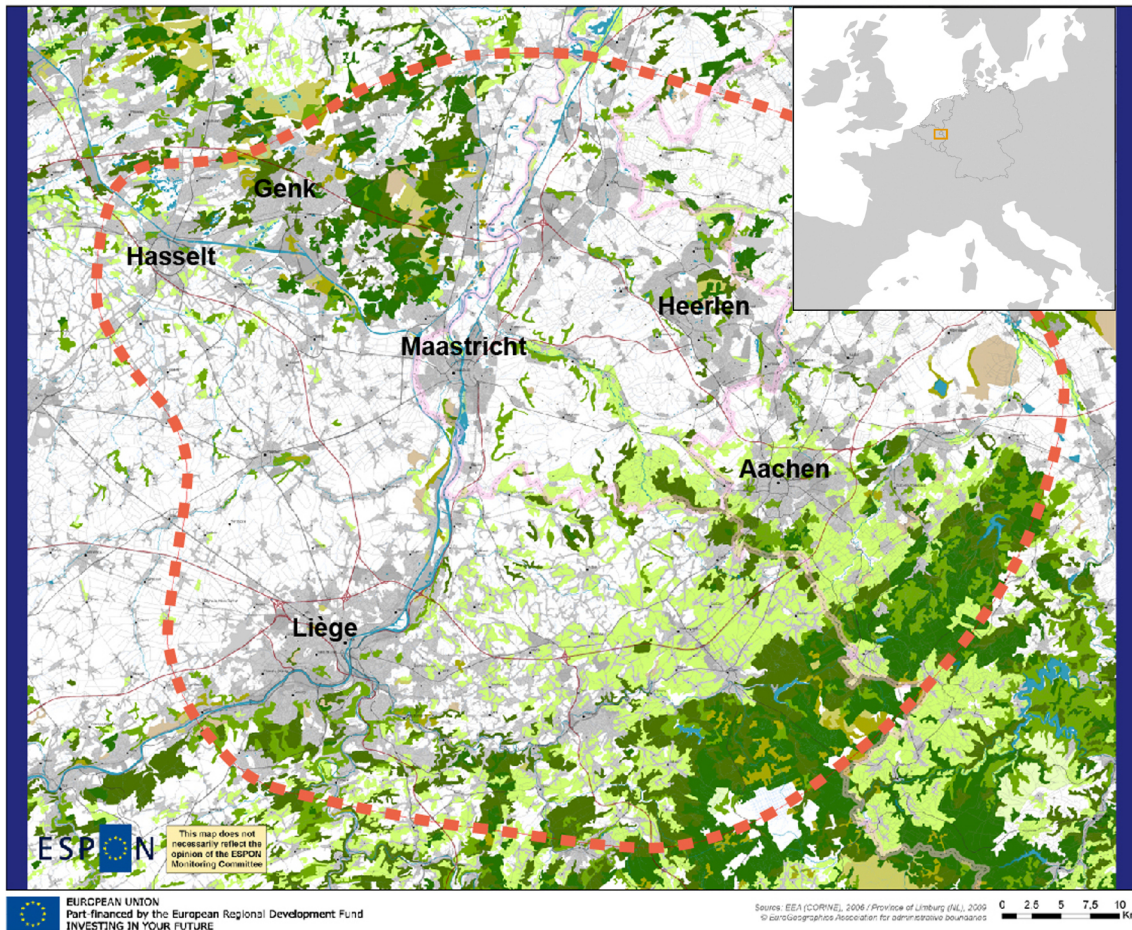


Figure 1. Project area of the Three Countries Park [8]

etc.[13] including stakeholder interviews, stakeholder workshops, and expert meetings [8,9] as well as research by design [14]. The landscape policy as a product in particular served as an integration vehicle [13].

3 Results

3.1 Analytical results

3.1.1 Landscape qualities and European identity of the Three Countries Park

“Landscape” has slightly different meanings in the three working languages of the 3LP. The French “paysage” has a more culturalistic meaning, the German “Landschaft” has a more naturalistic meaning, and the Dutch “landschap” is a mixture of both [8: 12-14, 9:26]. To elaborate a common understanding for project departure we used the definition of landscape by the ELC as “an area as perceived by people, whose character is the result of the action and interaction of natural and/or human

factors” [11]. Accordingly, landscapes – although often lacking clear system boundaries – can be understood as social-ecological systems in the sense of nature-culture-hybrids at the interplay of physical-material reality and mental constructs, symbolic interpretations and societal regulations [15, 16: 76-82].

From a regional scale perspective, the landscape of the Three Countries Park is characterized by a “*diversified relief*” with ridges, valleys and plateaus with some fertile Loess soils, an “*abundance of water appearances*” like many springs, streams, ponds, water castles and the river Meuse, “*a polycentric settlement pattern*” including the triangle of cities of Liège in Belgium, Maastricht in The Netherlands and Aachen in Germany, and “*manifold cultural heritage*”. A small-scale mosaic of different vegetation structures like forests, croplands, and grasslands with hedges, orchards, treegroups and wetlands etc. give it a park-like “*varied green character*” with high recreational and biodiversity value.

We identified these structural qualities of the landscape – named “*core qualities*” in the project – based on literature studies as well as a map analysis, stakeholder

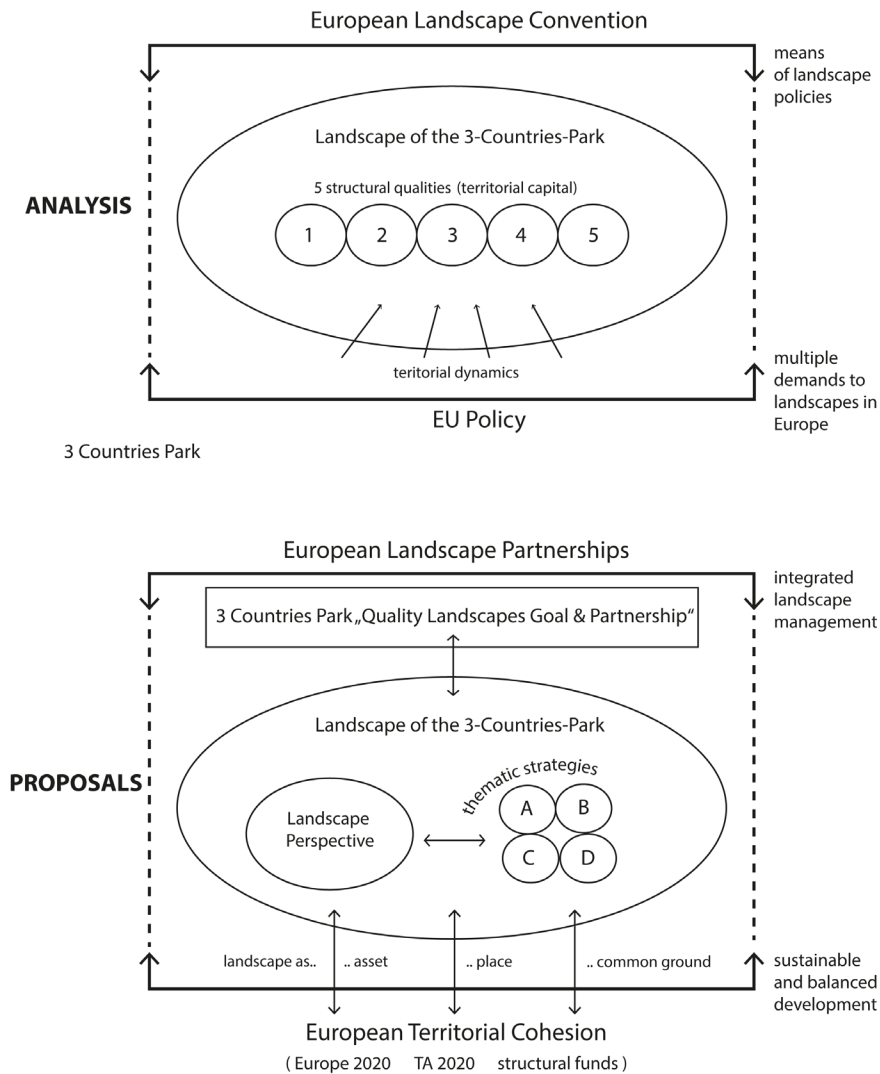


Figure 2. Diagram of research approach

interviews and workshops [8: 35-36]. To a large extent, they make up the natural-cultural heritage and attractiveness of the area today. With these characteristics the landscape forms basic territorial capital. It provides an agreeable living and working environment and presumably contributes to attracting visitors, companies and highly skilled professionals (a point which requires and deserves further research).

Furthermore, the landscape shows many traces of European epochs, as the area has been a node of European development. For example: The polycentric settlement pattern and intensive cultivation of the region’s Loess soils dates back to the Roman Empire. The Frankish empire of Charlemagne (and many dukedoms thereafter) left castles, monasteries and estates in the landscape. During the 14th century specialized agricultural production with increased cattle breeding created the appreciated ‘bocage

landscape’ characterized by pastureland with small scale field patterns and hedge structures. Several mines and heaps testify of the Napoleon period and the European Coal and Steel Community [9: 12–16]. Hence, the identity of the cross-border region is strongly marked by European history, while the landscape as a whole can be considered valuable heritage.

3.1.2 European-wide territorial dynamics evoking landscape change

However, as the above mentioned examples show, landscape is dynamic and under constant change. Today the area is undergoing typical territorial processes of land consumption, fragmentation and changing land management practices, etc. The analysis of the

representation of the 3LP area in various ESPON studies revealed that the following European-wide dynamics especially affect and transform the 3LP as well as other European landscapes [9: 36–61]:

- (a) Intensification of land use and economic diversification
- (b) Climate change mitigation and adaptation
- (c) Demographic change and territorial attractiveness
- (d) Polycentric development and suburbanization

(a) Due to globalization two agricultural trends are prevalent in the 3LP region: Bigger farms intensify their land use to stay competitive on the market. This often goes along with a simplification of landscapes, e.g. a reduction of small landscape elements and biodiversity, as well as environmental issues such as erosion and water eutrophication, due to removing hedges and tree groups or draining wet depressions, as well as excessive manure fertilization, etc. On the other hand less competitive smaller farms try to diversify their activities into other business areas, especially regional quality products and tourism. This offers chances for, but also requires investments into, landscape attractiveness and accessibility.

(b) The region's vulnerability to climate change is estimated not to be very high. However, climate change mitigation actions, especially the expansion of renewable energies, e.g. wind turbine installations or biomass production, are already changing the face and functioning of the landscape. Furthermore, ongoing adaptation actions in the 3LP, especially to reduce flooding, e.g. the construction of smaller dams and retention basins, continue to shape the landscape.

(c) Regarding demographic change, the 3LP region has a profile close to the EU average, e.g. characterized by slightly positive net migrations, an ageing population and increasing mobility. Regional migrations and commuters change the 'social landscape', especially in rural areas, and evoke partially conflicting and mutually synergistic relationships and expectations towards the 'perceived landscape', e.g. between permanent residents and visitors or long-established inhabitants and newcomers moving to the countryside due to its landscape attractiveness [cf. 17]. Production and consumption of the landscape become equally important.

(d) The polycentric settlement structure of the 3LP provides a close proximity of rural and urban areas, and is therefore also considered a "*peri-urban region*" [18]. Urban citizen profit from rural and the rural population from urban amenities. However, the close proximity also favors the influx of urban dwellers into the countryside, known as a process of counter-urbanization, as well as further trends of suburbanization, which highly impact

the landscape. This dynamic especially requires careful guidance and management so that attractiveness and services of the landscape will not be lost or degraded.

According to a discussion of these dynamics in stakeholder workshops we identified particular challenges to be addressed by a common 3LP landscape policy, i.e. cross-border water management and the development of a cross-border ecological network, dealing with agricultural developments, energy transition and urbanization processes, and developing a cross-border recreational network, while maintaining an attractive, diverse, and historically rich landscape. Thus, besides crossing the borders, the biggest challenge in the 3LP actually is to cut across sectors and find multifunctional and synergistic solutions to be coherently implemented on the territory (especially with regard to finite land resources in this cross-border polycentric metropolitan region). This may be also true for many other areas, since physical landscapes basically accommodate a multitude of sectoral land uses and are shaped by all their needs and actions.

3.1.3 Landscape demands and support by European policies

In the context of territorial cohesion, coordination of sector policies is actually of great concern along with the need to develop policy instruments for integrated territorial development [3]. ESPON specifically asked us to provide evidence on which EU policies have a spatial impact. An empirical pathway to answer this question, however, was out of the scope of the study. Taking a theoretical pathway instead, we investigated both political requirements to landscapes as well as potential instruments for a cross-border landscape policy according to selected EU policy areas, which correspond to 3LP development themes (Figure 3).

In order to identify political requirements imposed on landscapes, we extracted policy objectives from significant documents in the abovementioned policy areas and translated them into 'landscape demands' with regard to the fulfilment of spatial/landscape functions and the provisioning of ecosystem services (Table 1).

The full table of resulting landscape demands is given in Annex 1. It shows on the one hand that various conflicting, but also synergistic demands arise from political goals, which need to be managed in a balanced and integrated way by those responsible for regional & landscape policy taking into account the characteristics of the place. On the other hand, it shows that many services, or service bundles, if supplied in suitable

EU POLICY AREAS:	Regional policy	Culture (incl. Cultural Heritage)	Agriculture and 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 & infrastructure		Nature (ecological structure, habitat, biodiversity)	Water and Environment		(not specifically addressed)	(not specifically addressed)	Tourism

Figure 3. Selected policy areas in correspondence with 3LP development themes [8: 21]

landscape units [cf. 16: 139-141], largely support various (sectoral) 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.

Cohesion policy in the form of structural funds offers a couple of area-based instruments, such as Integrated Territorial Investment [19], Community Led Local Development [20] and the LEADER program for rural areas, specifically designed to support integrated local-regional actions [21], as well as the InterregA Program, specifically designed to support territorial cooperation in cross-border regions. However, the usefulness of these instruments for landscape policy highly depends on which thematic objectives and investment priorities, predefined in the regulations governing the structural funds, are chosen by the national/regional and territorial cooperation programs and how the programs are designed. For example, the ERDF thematic objective and its investment priorities relating to environment, resource efficiency, natural cultural heritage and green infrastructure [22: Art. 5(6)b-d] could have been useful for synergistically addressing 3LP challenges such as developing a cross-border ecological network and water management, improving landscape attractiveness, and dealing with agricultural and urban developments. However, this thematic objective was not chosen in the Interreg VA Program for the Euregio Meuse-Rhine [23].

Other legal, financial and communicative instruments may be used. In the policy proposals for the 3LP we considered various instruments mentioned in the Flagship Initiative and Roadmap to a Resource Efficient Europe [24,

25], e.g. payments for environmental services, natural capital financing facility, green public procurement, innovation partnerships, Common Agricultural Policy measures, river basin management plans, and soil sealing guidelines etc. (see Table 2), as well as the environmental program LIFE.

While landscape values are referred to in the Territorial Agenda [5] and the Green Infrastructure Strategy [26], we could not find any direct promotion of integrated landscape development or dedicated tools for landscape policies. This leads us to the conclusion that, while EU policy places high demands on landscapes, support for overarching landscape approaches is weak.

3.2 Proposals

3.2.1 A cross-border landscape policy for the Three-Countries-Park

The recommendations for a 3LP landscape policy were to form an interface for connecting local-regional initiatives across the Dutch, Belgium and German borders a) with each other and b) with EU policy priorities and instruments. Our proposal for a landscape policy consisted of three parts:

1. A landscape perspective – as required by the stakeholders – addressing common challenges, objectives, and guiding principles and their spatial explicitness, particularly referring to the ELC means of “*landscape planning and protection*”,

Table 1. Examples of landscape demands arising from EU policies

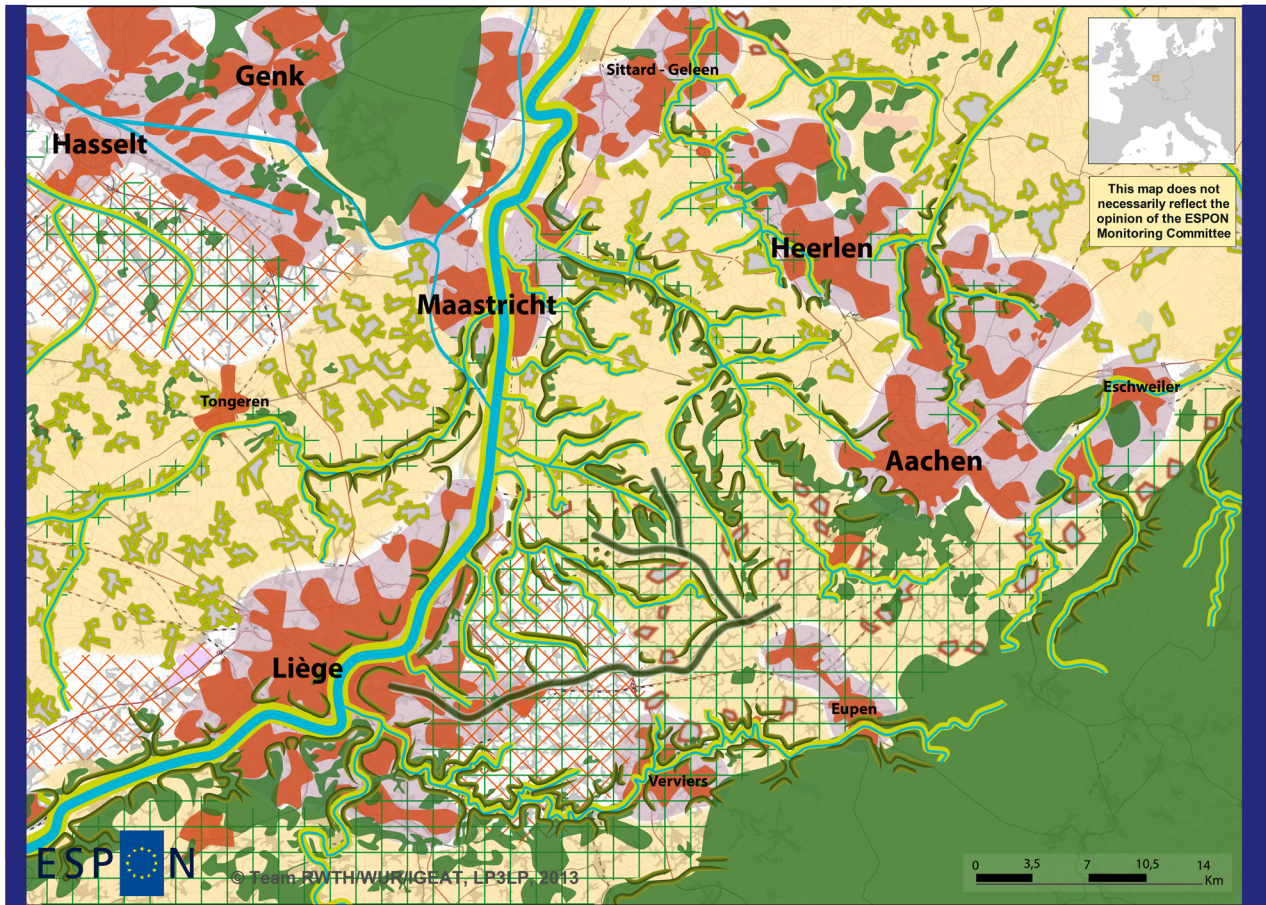
Policies	Policy objectives	Landscape demand	/ supply
EU overall strategic policy orientation			
Europe 2020 Strategy (2010) / Flagship Initiative Resource Efficiency (2011)	To create growth & jobs in a smart, sustainable and inclusive way	Provide site and resources for economic production & consumption and infrastructure in a resource-efficient way	Carrier/ provisioning
Economic sector policies			
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
Renewable energy sources directive (2009)	RES BE 13%, DE 18%, NL 14%	Provide corridors for energy network installations (TEN-E)	Carrier
	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
		Provide public goods (e.g. farmland biodiversity, resilience to disasters)	Regulating/ cultural
		Provide attractiveness & identity (in rural regions)	Cultural
Environmental sector policies			
Water framework + groundwater directive (2000 / 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
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
		Provide genetic diversity and ecosystem services	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, carbon sinks in soils and standing biomass stocks, disease regulation	Regulating/ habitat
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
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

2. A landscape partnership formation addressing quality landscapes as a common goal and questions of adaptive capacity and governance, particularly referring to the ELC means of “*landscape management*”, and
3. Four thematic strategies linking the guiding principles of the landscape perspective with specific EU priorities and instruments, and referring to all three means of landscape policy as promoted by the European Landscape Convention [11: Art.1d-f].

3.2.1.1 Landscape perspective

The landscape perspective is a structured plan to preserve and enhance the core qualities of the 3LP landscape and to improve its ecosystem services. It aims at guiding developments and decisions that affect the future physical form and function of the landscape. The following elements constitute the landscape perspective:

- 13 Guiding principles (Figure 4, legend): General spatial principles for landscape development, based



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Local level: not to scale
Source: LP3LP, RWTH/WUR/IGEA
Origin of data: EuroStreets/Geodan BV 2009, CORINE/EEA 2006

OVERALL LANDSCAPE FRAMEWORK

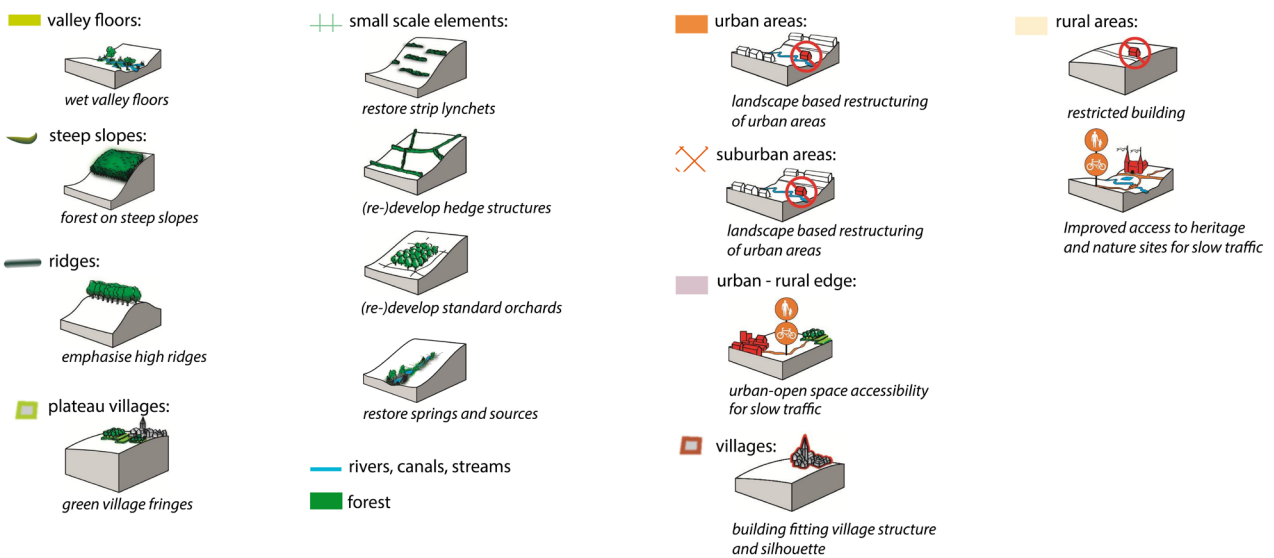


Figure 4. The landscape framework of the 3LP Landscape Perspective, the legend below showing its 13 guiding principles [7: 10] (see Annex 2 for maps of the present landscape structure, the cultural identities, the green-blue framework and the urban-open space framework)

- on shared objectives for preservation, development and cultivation of the core qualities.
- Present structures: Landscape structure (based on relief, water system and polycentric infrastructure) and cultural identities (based on landscape areas with names common to the public): Important components of the region's identity and physical elements, defining which guiding principles can be applied where, and how (see Annex 2).
 - Future structures: A landscape framework (Figure 4, map) that consists of a green-blue framework and an urban-open space framework (see Annex 2) shows the structures that will emerge on a regional scale by applying the guiding principles while considering the landscape structure (Figure 4, map). The green-blue framework will provide a backbone in the landscape for enhancing the core qualities and maintaining key landscape functions and ecosystem services. The urban-open space framework will support this by ensuring space for the green-blue framework and improving the accessibility of the landscape for recreation and tourism.

With these elements the landscape perspective responds to the double ambition of unity and diversity. The guiding principles and their spatial application within the two frameworks represent 'unity' across the borders. At the same time they provide opportunities to respect different identities, to reflect cultural differences and to enable specific tailor-made place-based local solutions and thus promoting diversity in landscape planning, design, protection and management.

The landscape perspective is meant to be a vision document with no formal or binding status. It has been appreciated by the stakeholders and is now used by the 3LP partners with spatial and landscape planning competence as well as many projects and local organizations as a source of reference, guidance and inspiration.

3.2.1.2 Quality landscape partnership

A further implementation of the landscape perspective would require concerted action by various public and private land users. This may involve a change in behavior and habits of a multiplicity of actors such as land owners, land managers, planners, and engineers etc. High communicative and cooperative effort would especially be needed for applying the guiding principles on privately owned land, which represents about 2/3 of the land in this area.

Against this backdrop, we proposed to further develop the existing 3LP initiative into a dedicated "European

cross-border partnership for quality landscapes", reaching out to various actors. By 'quality landscapes' we mean those landscapes which do not only appear as being of high aesthetic, recreational and heritage value but also meet demand for other key functions and services (see table 3, cf. concepts of "ecological quality" [29] and "landscape quality management" [16]). Accordingly, we recommended conceiving the landscape not only as an area, but as a concrete environmental setting constituting common living & production space of human societies, their economies and other living communities [ibid.]. Quality landscapes, understood and managed in this way, basically build the foundation of a balanced and sustainable territorial development. They will provide not only the living surroundings of people, but also habitats for species as well as topological conditions and metabolic environments for economic activities (production and consumption) – and are vice versa shaped by a close interaction between all of these factors.

By now the proposal of a quality landscape partnership with a European orientation has been implemented by the stakeholders. A cooperation agreement for the Three Countries Park has been signed by 13 governmental partners [unpublished document]. It defines as the mission of the 3LP building a cross-border platform for exchange and cooperation to preserve and develop the quality of the open space and the landscapes of the Three Countries Park as well as urban-rural linkages with the aim to contribute to a sustainable development of the Euregio Meuse-Rhine [27]. Furthermore, in order to structure the activities of the 3LP, a strategic plan has been developed for the period 2016-2019 [ibid.], being concretized by work plans each year. The cooperation agreement and the strategic plan, besides referring to the ELC, explicitly mention and draw on the LP3LP study as a political basis and orientation for the 3LP's activities.

While the ELC does not define landscape quality, it allows for a broad spectrum of possible "landscape quality objectives" to be addressed by a landscape policy based on peoples' perceptions of landscape features [11:Art 1c, 28]. Since extensive participation processes were out of the scope of the LP3LP project, we used the expert-led guiding principles of the landscape perspective, discussed in stakeholder workshops and two public events, as quality objectives in the project. However, while the guiding principles give useful orientation, they were not meant to (and are not able to) gain formal acceptance as political goals in the partner regions of the 3LP. Instead, the 3LP strategic plan refers to broader political goals as quality objectives, e.g.

enhancing landscape character and accessibility as well as typical environmental quality aspects such as habitat, water and soil quality [27].

With regard to the need for cooperating with various land-use sectors and mobilizing local knowledge sources, we recommended that the basic governmental partnership be gradually extended by building up strategic partnerships through concrete projects with further stake- and knowledgeholders, especially river basin organizations, nature organizations, local action groups, agricultural advisory services, tourism agencies, economic chambers, and volunteer organizations etc., complemented by creative public participation campaigns.

In order to conduct such communicative collaborative activities and projects we furthermore recommended investing into a lean 'operational landscape management' in support of the partnership. In line with the definition by the ELC [11: Art.1e] landscape management can be understood as 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 form of adaptive planning which itself evolves as societies transform their way of life, their development and surroundings. It can also 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"* [28: I.5].

Thus, per definition, the informal cooperative instrument of landscape management is a tool for establishing adaptive capacity in order to respond to actual and anticipated changes. Furthermore, by cross-linking various sectors, scales and territorial units (Figure 6, horizontal, vertical and territorial axes) we expect it to provide critical mass for cross-border and sectoral synthesis as well as creative and innovative stimuli for indigenous territorial development. However, whether operational landscape management can actually deliver on its promise depends on a clear mandate and dedicated resources, as further discussed under point 4.3. Besides exploiting European opportunities we recommended developing an independent Three Countries Park Fund from possibly both public and private sources as a long-term option. Therefore, the agreement-based quality landscape partnership may be transformed into another legal institutional form like a Three Countries Park foundation or landscape trust, possibly in the sense of a *"common property trust"* [30].

To date, this recommendation of installing a small cross-border landscape management unit could not be

satisfactorily implemented. A coordinating 3LP project management has been established on a part-time basis hosted by the Euregio Meuse-Rhine, which – together with a project group of the governmental partners – mainly performs cross-border inventory, networking and exchange among the partners and other organizations (like those mentioned above) through various events and project initiatives. However, with regard to a complex governance structure of the 3LP partnership operating over 3 national borders, 5 regions, and many institutional departments and levels in 4 languages, this capacity is not sufficient to perform landscape management as described above or to advance with territorial development pathways, as the thematic strategies suggest below. Further investment into cross-border management capacity would be required to arrive at a better relation of development output to partnership administration, which is also true for other euregional policy areas, like cross-border economic development and labor market, public safety, and education etc.

3.2.1.3 Thematic strategies

In order to link up the 3LP landscape perspective and partnership with the strategic EU policy level and economic sectors we suggested four thematic strategies: (1) a green infrastructure strategy, (2) a cultural heritage and access strategy, (3) a complementary biomass strategy, and (4) a quality production strategy, each with a specific pilot project as a 'starter' option (Table 2).

(1) Since the blue-green principles of the landscape perspective all establish functional vegetation in the landscape delivering services, green infrastructure – recognized as an EU political concept and investment priority [26] – may represent the most immediate opportunity to realize the green-blue framework of the landscape perspective. As main functional territorial units to be covered simultaneously in the form of overlaying landscape layers we suggested river basins for water-bound regulating services, habitat areas and networks for reproductive habitat related services, and landscape character/ identity areas, known to the public by name, for cultural services [cf. 16: 139-141].

(2) Under the cultural heritage and access strategy we suggested developing a cross-border access hub network, which will offer three types of access to the landscape identity areas, their (European) history and heritage:

- Informational access – via a web-based interactive landscape information platform including synthesized geographical data, landscape portraits

and various other (e.g. touristic) applications.

- Emotional access – e.g. through temporary land art events at symbolic Three Countries Park's sites, storytelling and/or enjoyment of regional products.
- Sustainable physical access – by adding and strengthening nodes within the already growing public mobility network including, e-bike, e-car sharing, further trails and bike paths etc.

(3) The complementary biomass strategy intends to introduce bioenergy crops and productions practices which do not directly compete with but rather complement agricultural food production in terms of providing ecosystem services on a landscape scale [cf. 16]. Complementary practices are for example: agro-wood contour strips and other agroforestry practices, hedge management, or short rotation plantations for wastewater treatment. They can be part of a green infrastructure, as they do not only provide bioenergy sources but also other services like erosion control, water quality regulation, habitat or characteristic and attractive landscape features.

(4) Besides the ecosystems, the farmers are actually the greatest 'landscape producers'. The quality production strategy is therefore dedicated to farmers and other land users to co-produce quality products and quality landscapes. As measures of this strategy we proposed:

- Payments for ecosystem services, especially for water quality production,
- Urban-agricultural parks at the fringes of the bigger cities as dedicated part of urban green infrastructure,
- Development and cross-border promotion of regional quality labels and products per landscape identity area.

The content of the thematic strategies has been taken up into the 3LP strategic plan via defining thematic areas of action and potential activities and projects. Each year one thematic focus is chosen by the partners, while considering integrated territorial development and urban-rural linkages. Some activities have started, like further geographic data integration and a comparative analysis of ecological networks and landscape zones in the partner regions, as well as a project initiative for subjective mapping of peoples' landscape perception and appreciation. These activities will lay the basis for cross-border green infrastructure development and providing informational and emotional landscape access.

Activities at the interface of agriculture and landscape with regard to quality production are intended to be developed next in cooperation with local action groups,

for example. As farmers (and foresters) manage more than 80% of the land area in the Euregio Meuse-Rhine, they are confronted with a vast amount of societal expectations and partly conflicting regulations with a spatial impact. A recent 3LP forum on the topic of "landscape as a co-product of agriculture" showed a high need for communication and cooperation across sectors and borders, for place-based solutions and for coordinating individual actions above farm scale, i.e. landscape scale. Hence, from the field to the landscape scale the need for area-based instruments for policy integration becomes most evident, a point which is dealt with in the discussion.

3.2.2 Recommendations on European level

Besides recommendations on the regional cross-border level our task was to address questions on the European level: How can investments in landscape support European Union policy, especially cohesion policy? And how could a landscape approach be strengthened by EU policy, especially through the concept of territorial cohesion? Based on our analysis we used three metaphors, namely (1) "landscape as asset", (2) "landscape as place", and (3) "landscape as common ground" in order to link 'landscape' with the different components of territorial cohesion introduced at the beginning and to highlight aspects of a 'landscape approach' holding potential for EU cohesion policy [8: 67-70]:

(1) Landscape as asset: The analysis of landscape demands in relation to spatial/ landscape functions and ecosystem services in the LP3LP project shows that landscapes and their ecosystems provide (mostly non-commodified) values at the base of social and economic activities. Investing in value-creating landscape features and processes will thus mean to build up natural-cultural territorial capital for indigenous regional development.

(2) Landscape as place: The analysis of the landscape category itself as well as its structures and core qualities in the 3LP show that landscapes form the concrete spatial-temporal setting of a region or territory, which is perceived by people as their living and working environment as well as a source of local or even European identity. This hints at an important role the distinctiveness and inclusiveness of landscape may play for a place-based policy approach.

(3) Landscape as common ground: The analysis of European dynamics and 3LP challenges as well as other cross-border regions in the LP3LP project suggests that landscape is a common ground, on which trends and actions of multiple sectors take place, often in an

Table 2. Overview of policy proposals [7: 12]

3LP landscape policy proposal	Main objectives	Key EU instruments
Landscape perspective	To provide common goals and principles in a spatially distinct way	ESPON targeted analysis (this study)
Landscape partnership	To build-up integrative cross-border capacity and cooperative partnerships for effective management of 3LP quality landscapes	European Regional Development Fund: -Integrated territorial investments -INTERREG program -Community led local development EAFRD: LEADER program
Green infrastructure strategy (Pilot project relating to green-blue framework: Green infrastructure in the Geule-Gulp, Jeker, Berwinne, and Wurm basins; pilot project relating to urban-open space framework: Spatial planning for quality landscapes)	To protect and enhance 3LP biodiversity, ecosystem services and core qualities (focus: water, soil and climate regulation/ adaptation, habitat and cultural services)	-Green infrastructure financing facility -LIFE+/ integrated projects -River basin management planning/ Water framework directive -Climate adaptation strategies and carbon credits -Natura 2000 network and payments/ Habitats and Birds directive -Common Agricultural Policy/ direct payments: 5-7% ecological focus area
Cultural heritage and access strategy (Pilot project: 3LP Landscape information platform)	To valorize cultural heritage and to enable informational, emotional and sustainable physical access to 3LP landscapes and heritage sites	-European Regional Development Fund (ERDF) and INTERREG programs -Rural development measure (EAFRD): 'Basic services and village renewal'
Complementary biomass strategy (Pilot project: Complementary biomass production in the 3LP)	To introduce the use of complementary bioenergy crops, production practices and technologies, which yield ecosystem services and landscape quality as added value	-Horizon 2020 research & innovation program -European Innovation Partnership Agricultural productivity and sustainability -ERDF & INTERREG programs/ Smart Specialization
Quality production strategy (Pilot project: PES-scheme for transboundary ecosystem services)	To encourage and support farmers and other land users to simultaneously co-produce high-quality (food) products and quality landscapes	Measures within national/regional programs for rural development (EAFRD), especially: -Agri-environment-climate payments -Forest-environment-climate payments -Quality schemes -European Innovation Partnership Agricultural productivity and sustainability

uncoordinated way. Hence a closer consideration of landscape management at EU level could facilitate horizontal, vertical and territorial integration.

We discussed these metaphoric landscape dimensions in a meeting with international landscape

science and policy experts [9: 157–160], who basically confirmed the usefulness of these hypotheses. However, to realize the potential a landscape approach may hold for cohesion policy will require further research and practice, subject to the discussion in the following.

Table 3. Correspondence of landscape functions with ecosystem services and quality aspects and their contribution to smart, sustainable and inclusive growth *Sources: modified after [27, 8: 15] based on a) [35], main categories [36, 37]; subcategories [38]; b) [39-41]; c) [16].*

Spatial / Landscape functions ^{a)}	Ecosystem services ^{b)}	Landscape quality aspects ^{c)} (examples)	e)
Multifunctional landscape	Provisioning of multiple services	Quality of landscape as degree to which properties of landscape processes, patterns and elements fulfil landscape functions and other demands on landscapes	
Production/ carrier functions	Provisioning services		Provisioning of site and resources
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	Environmental qualities	Regeneration of life and favourable living and production conditions
Climate function and air quality	Carbon sequestration and storage Local climate and air quality regulation	Carbon content of the soil and in standing biomass Moderate temperature amplitudes, air quality	
Water resources function and retention function	Water regulation/ provisioning of fresh water Water regulation/ moderation extreme events	Water quality Water retention capacity	
Natural yield function (partly covered by two functions above)	Erosion prevention/ maintenance of soil fertility Waste (water) treatment and nutrient cycling	Soil quality Water quality, soil quality	
	Pollination		
	Biological control	Absence of pest and diseases	
Habitat functions	Habitat/ Supporting services		Regeneration of productive human capabilities
Biodiversity function	Habitat provisioning (including habitats along migratory routes) Maintenance of genetic diversity	Habitat quality / connectivity Biodiversity	
Information functions	Cultural & amenity services	Qualities of landscape perception	
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	Recreational quality Aesthetical quality, landscape atmosphere e.g. degree of 'wilderness', 'naturalness' or 'emptiness'	
Archive function	Identity, sense of place, sense of history	Landscape character Heritage quality	

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

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

Classical production factors

Sustainable growth

Smart & inclusive growth

4 Discussion

4.1 Landscape as asset – enabling smart, sustainable, inclusive and indigenous regional development

Presently, EU regional/ cohesion policy as an investment policy is strongly devoted to “*growth and jobs*” [31, 32]. A growth agenda usually imposes high demands on landscapes by an increasing appropriation of site and resources for economic production and consumption and associated development, e.g. housing or infrastructure. While growth is supposed to be “*smart, sustainable and inclusive*”, the Flagship Initiative for a resource efficient Europe shall help to decouple economic growth from resource and energy use [31]. However, from a landscape point of view – with regard to already high land use competition – a post-growth policy agenda [33, 34] would be highly desirable for the policy decades to come. Furthermore, the headline target measuring success of “*sustainable growth*” only refers to energy use and does

not include any land, ecosystem or landscape related values [31]. This principally bears the risk of growth at the cost of land(landscape) degradation.

We consider an understanding and recognition of value-creation and value assignment in landscapes – commodified and non-commodified – as crucial for preventing degradation and enabling indigenous regional development. Ecosystem services, landscape functions and landscape qualities/ quality objectives are suitable concepts to describe these processes of value-creation and value assignment and to mediate between a non-market landscape demand and supply side [cf. 16: 83-104] They can be used to link various landscape features and processes to smart, sustainable and inclusive growth (or rather development)(Table 3):

- *Carrier/ production functions* and *provisioning services* provide site, energy and material resources as classical production factors.
- *Regulating services*, together with *habitat /supporting services*, continuously deliver favorable living & production conditions (e.g. fertile soil, flood protection, reliable climatic conditions, etc.) as

an inevitable component of sustainable growth/development.

- *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 are fundamental to smart & inclusive growth/development.

While site, energy and material resources are clearly involved in any social and economic activity, the contribution of the other services is less obvious, but equally important. Essentially, regulating and cultural services provide for the “(re)productivity” of society and its economy and therewith sustain any territorial development [42, 16: 104-114]. Hence, landscape policy should be seen as enabling rather than hindering economic activities. However, to be recognized as such, landscape policy needs to be more development oriented than being solely focused on conservation or restoration of a present or past status quo, which is still often the case. Therefore, landscape professionals and competent authorities need to proactively welcome and engage market actors and land owners as partners in processes of landscape protection, planning and management. It seems useful in this regard to establish communicative and creative processes like collaborative landscape planning on a more continuous rather than sporadic project basis (similar to those processes and agencies supporting technological innovation and their market introduction). By conceptualizing landscape as a common good and development factor such processes can mediate between landscape producers and consumers [cf. 43] and trigger different forms of innovation [16: 249-254].

However, in our view the landscape profession also needs a stronger, more coherent theoretical basis, especially when talking to a multitude of actors and sectors. Presently, different concepts, which are not well aligned, are used in parallel and cause confusion. In the project we experienced a conceptual gap between the different political agendas of landscape quality objectives (ELC), ecosystem services (EU) and landscape functions (national contexts). Further research is needed to reconcile the different approaches.

While there is still much scientific debate concerning the relationship of ecosystem services and landscape functions [44, 16: 83-119], their subcategories actually correspond to a large extent. With the ecosystem services concept, however, it seems easier to demonstrate value-creation in landscapes vitally contributing to EU priorities

(Table 3). Most of the stakeholders, though, preferred the notion of landscape functions due to their spatial planning habits. Landscape quality objectives also seemed critical for identifying values generated in the landscape on a local scale, as they are based on the values people attach to specific places, features or compositions of landscapes. Both the concepts of ecosystem services and landscape quality objectives each claim their share in ‘well-being’ [40, 11, 28].

Nevertheless, it is unclear, for example, whether and how to link the concepts within one landscape policy or to address them separately; whether landscape quality objectives only fall into the cultural services realm or if they can also be associated with other services (e.g. regulating/habitat); or to what extent human activities and artifacts may be included in the concept of ecosystem services or whether another category of “*landscape services*” [45] is needed. Further questions are, whether landscape quality objectives could be part of the EU political goal of improving environmental quality [1: Art.191] and whether landscape or environmental quality objectives, like the good status of water [46: Art.4], may be used to assess the performance of ecosystem services and to set targets for cross-cutting landscape policies [cf.41, 47].

By all means we found it difficult to combine the different political agendas into one landscape policy. With the metaphor of a ‘landscape value chain’ we used the quality category as a starting and end point for the 3LP landscape policy embracing ecosystem services and landscape functions in-between (Figure 5). On the one side, the core qualities are appreciated by the stakeholders, since they represent an interpretation of characteristic bio-physical landscape features yielding various benefits such as cross-border identity or open and enclosed landscape experiences including wide views and idyllic places for contemplation and recreation etc. On the other side – as mentioned before – the development of ‘quality landscapes’ arose during the series of workshops as a shared end for continued collaboration across the internal 3LP borders.

The guiding principles, which we understood as expert-led landscape quality objectives on a regional scale, fit in on the landscape asset side of the value-chain. They propose spatially arranged landscape structures and features, which one expects will lead to the enhancement of landscape character (as roughly represented here by the 5 core qualities) and will yield landscape services. For example, forests on steep slopes usually reduce erosion, retain water, provide habitat etc. and can reinforce the legibility of the landscape. However, whether improved services and quality will be actually

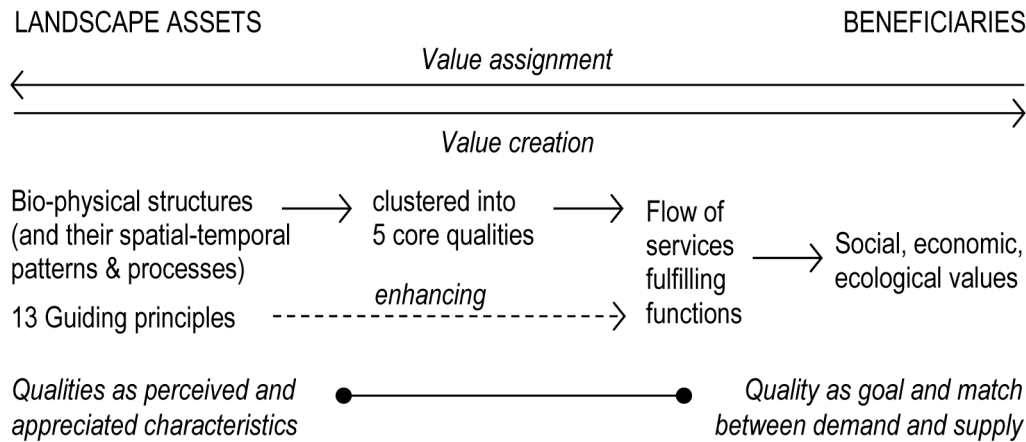


Figure 5. Abstracted 3LP landscape value chain [based on 9: 135]

realized is to be assessed after the fact, i.e. after they have been implemented. This principally calls for “*landscape monitoring*” [48, 49] in the long term, which will observe different aspects of landscape quality and values. This could, for example, include standardized indicators on water quality and biodiversity as much as periodic surveys of people’s appreciation of landscape settings and sites as well as expert judgments, e.g. by landscape architects.

While we were asked in the project to present one ‘indicator for landscape’ we suggested developing a robust set of indicators as a separate project. This certainly will not be an easy task. The 20/20/20 energy and climate target for sustainable growth [31] in any case does not adequately represent sustainable development of regions and their landscapes [50]. Therefore, with regard to the development of a “*dashboard of indicators*” for sustainable growth [25] we recommended to consider ecosystem service indicators in relation to environmental and landscape quality targets, which will need to be to a certain extent regionally refined.

The challenge thereby is again to link more ecologically derived ecosystem service indicators with concepts for the assessment of landscape quality of the social sciences and the design profession. This will require aligning ecosystem services research with landscape research [51] and research by design or topological approaches [52]. A common denominator or “*boundary object*” linking different disciplines of the natural and social sciences and other knowledge systems like the arts [15] could be to understand different aspects of landscape quality as (desired) characteristics of spatial-temporal processual patterns perceived in the landscape by people and experts, and brought about in the landscape by combined ecosystem and human activities [16: 114-118].

These patterns actually qualify the landscape as living and production space. They constitute the distinctiveness and uniqueness implied in ‘place’ as a starting point for indigenous regional development.

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

While the Europe 2020 strategy does not account for landscape values, the Territorial Agenda 2020 specifically recognizes them as territorial capital along with ecological and cultural values [5]. The Territorial Agenda, furthermore, promotes a place-based policy approach to build on specific regional potentials and to avoid ‘territorially blind’ standardization. Standardization is an intrinsic principle of EU policy. As stated in the beginning, 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. Thanks to the Urban Wastewater Treatment Directive a newly built treatment plant for the city of Liège in Belgium allows fish species to return and people to canoe again in the Meuse River downstream in the Netherlands (as students were able to realize in a summer school associated with this project). However, there is also the risk that standard-setting policies create uniform landscapes, especially if

policies reward or promote single outputs or technologies as experienced with the former CAP and may be further experienced with the promotion of biomass/ bioenergy production. Therefore processes are needed that can translate standardized policies into place-based solutions and well-integrated local actions.

Landscape is a place or a composition of places with a unique setting, an individual history, a distinct character as well as specific institutional constellations. So landscape has the potential to serve place-based approaches by providing the concrete ‘spatial-temporal matrix’ for local-regional development [cf. 43] and the implementation of standardized policy objectives and principles with a spatial impact. Vice versa, the place-based territorial policy approach seems conducive to the development of diverse quality landscapes requiring tailor-made solutions. However it still appears ‘fuzzy’ to policy outsiders [6]. We therefore suggested inter alia developing a guiding document on the place-based policy approach with a focus on landscape, including landscape analysis in territorial analysis for evidence-based policy making, and to provide for mechanisms that can contextualize standardized policies. This should involve both (1) ‘objective’ and (2) ‘subjective’ aspects of landscape character or ‘landscape as place’ respectively: (1) the ‘objective’ setting of the landscape as composed by a specific relief, distinct water flows, courses and bodies, a discrete distribution of vegetation and other populations or specific type of settlements and other land use and land management practices etc. and their changes over time; and (2) how the same place exists emotionally and symbolically for people [52]. We consider both aspects important for a place-based policy approach.

For example, based on their investigation of effects of agri-environmental schemes in different European countries, Pinto-Correia et al. [17:343] claim that *“the regulations decided at central level should aim less at mass solutions. Rather they should become more flexible and create the conditions for the identification and application of specific solutions to specific places, and in parallel create a basis for developing corresponding instruments.”* With regard to the management of rural landscapes and policies for rural development, they point out that *“the challenge is to understand ongoing dynamics in a contextual way”* [17:344]. A landscape (ecological) approach here can help to understand on the one hand, how ecosystem processes discretely operate in a specific spatial-temporal setting. On the other hand, a landscape (sociological) approach can help to understand the behaviour of different actor groups, like land owners, land users, dwellers, visitors, conservationists etc. according to their perception of and

relation to landscape as well as their different motivations and the constraints under which they act. This will allow for strongly contextualized knowledge generation [53], which is important for effective policy implementation on the ground, and for tailoring instruments to specific situations. However, a dedicated landscape management team equipped with sufficient resources is needed to reach out to various sectors and actors and to draw on their place-based experience, knowledge and ideas.

4.3 Landscape as common ground – facilitating horizontal, vertical and territorial integration

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 EU policies, in particular through a couple of *“flagship initiatives”* [31]. However, breaking down single sectoral policies from the European to the local scale by specialized competent authorities bears the risk of one-sided fragmented interventions, which can cause contradictions, land-use conflicts and trade-offs between various functions and services. With regard to territorial cohesion Böhme et al. stress the need to horizontally integrate sectors, to vertically integrate levels across scales and to territorially integrate functional units [6].

Although landscapes greatly vary, it becomes obvious when developing landscapes as territorial entities that basically all present land uses and their sectors are (to be) involved as well as the different levels and departments regulating parts of landscapes. Hence, a professional landscape management activity – as an adaptive quality oriented process involving various actors from different sectoral domains and governance levels as well as covering multiple functional territorial units (cf. 16: 152-209) – could facilitate horizontal, vertical and territorial integration (Figure 6).

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 need for trained professionals with comprehensive transdisciplinary and synthetic knowledge and skills. To overcome these barriers we proposed encouraging cooperative mechanisms and training activities which closely link territorial development to means of landscape policy, in particular landscape management, through regional/ cohesion policy, and to extend the scope of area-

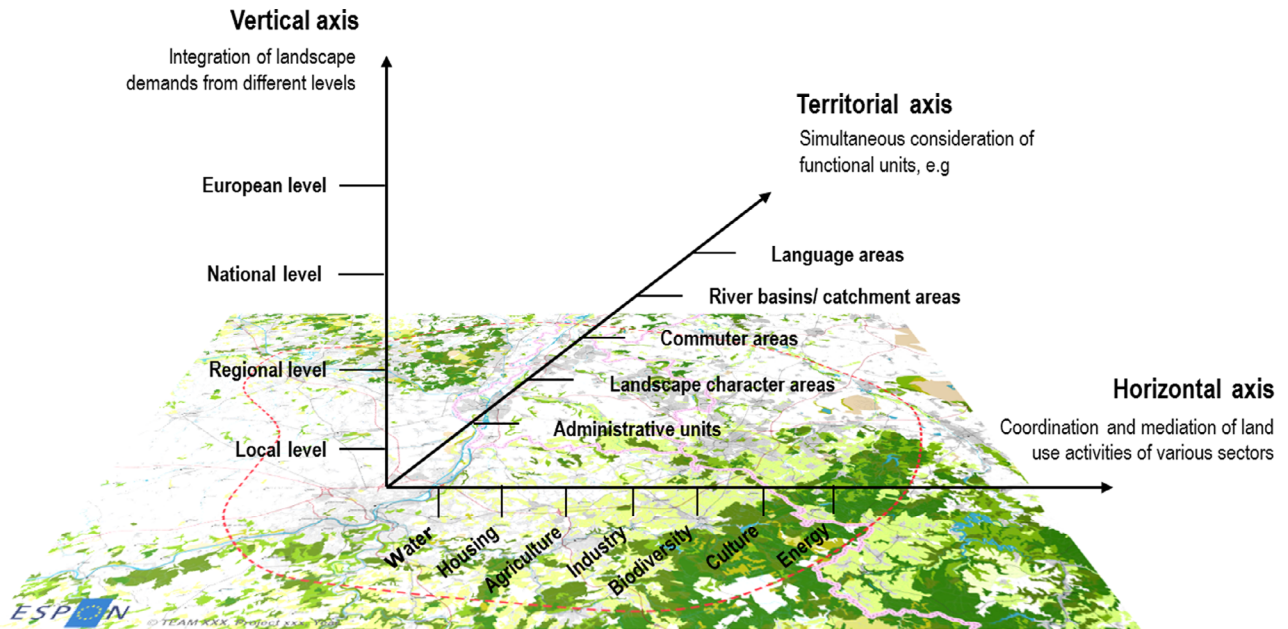


Figure 6. Vertical, horizontal, territorial integration through landscape management [8: 70]

based tools accordingly. This could e.g. involve support for building up capacity for integrated adaptive landscape management.

So far, “landscape scale management is the exception rather than the rule [...] as it requires co-ordination between land owners and managers at scales rarely operationalized or actively encouraged” [54]. With regard to maintaining or restoring multiple ecosystem services Prager et al. for example criticize that agri-environmental schemes presently “favour a farm scale approach leading to individual disconnected actions” [55: 245]. They stress that the future design and implementation of agri-environment schemes should encourage coordinated action at the landscape scale, whereby “investing in process, i.e. coordination for meetings, facilitation, advice, is as important as direct payments to land managers” [55: 246]. In the LP3LP project we found on the one side, for example, that a coordinating landscape approach could be highly beneficial when applying the CAP instrument of designating 7% of arable land as ecological focus area in the light of a green infrastructure strategy. This condition for direct payments [56: Art.32] – presently also working on a farm scale – would most likely gain considerable effectiveness if individual farmers’ actions were aligned with a landscape-oriented layout of green infrastructure, e.g. as roughly indicated by the green blue framework in this project. On the other side, project inventories in the 3LP indicate that especially the area-based instrument of LEADER local action groups is very useful with regard to a landscape approach and place-based development interventions.

Overall, the case of the Three Countries Park shows that cooperatively aligning the local level of a multiplicity of actors with the level of a broader landscape vision will require trust, intense communicative and synthetic work, and investment in human capacity. However, investments in an operational ‘landscape management activity’ bridging between existing institutions and connecting across borders, levels and sectors could lead to a return on investment by achieving more effective and efficient policy implementation and territorial cohesion. Additionally, it may provide leadership, co-management, vision and trust building, feedback, synthesis and creative stimulus as deemed necessary for the adaptive governance of social-ecological systems [57].

5 Conclusion

- Working with landscape as promoted by the European Landscape Convention means to go beyond mere conservationist approaches and engage among other stakeholders market actors as ‘landscape partners’ for a balanced and sustainable regional development.
- Landscapes and their ecosystems provide multiple services and (re)productive value-creation at the base of any economic activity. Means of landscape policy, i.e. landscape protection, planning and management, are suitable to maintaining and developing such territorial capital. Hence, landscape policy is not to be seen as hindering economic activities, but enabling economic productivity in the first place. This still

needs to be recognized at greater depths by political and economic players.

- Unifying concepts such as the landscape definition by the ELC or the concept of ecosystem services as well as shared goals like ‘quality landscapes’ offer common ground for collaboration across sectors, levels, and borders. However, there is the need to better align parallel political agenda using different concepts pertaining to the landscape category like landscape functions, ecosystem services, environmental quality and landscape quality objectives.
- Landscape – understood in a spatially and temporally explicit social-ecological sense – has a high potential to serve place-based policy approaches. More capacity for landscape management on the local-regional level and more area-focused political instruments on the European level are needed for translating sectoral broad scale objectives and standardized policy frameworks into (horizontally, vertically, and territorially) integrated place-based solutions.
- Investment into landscape policy and (quality) management equipped with sufficient resources and cooperative tools may provide adaptive capacity to deal with territorial change. A landscape perspective or vision and thematic strategies, plus a long-term landscape monitoring, can help here to navigate through the various dynamics of change in a desirable direction of territorial cohesion and sustainable development.
- Apart from institutional differences and difficulties, cross-sectoral and cross-border collaboration on landscapes – such as with the Three Countries Park – clearly shows advantages: namely mutual learning and innovation, which arises from bringing together different perceptions, experiences, tools and approaches.

ACKNOWLEDGEMENTS: The LP3LP project was financed by the ESPON 2013 Programme. We are grateful for support and constructive criticism by the ESPON Coordination Unit, in particular to the Project Expert Ann-Grit Pannenberg (Neuse). Furthermore, we would like to thank the stakeholders of the Three Countries Park, who provided valuable input throughout the whole project and challenged the research upon usefulness, especially the lead stakeholder J.Th.M. (Jan) Houven, Province of Limburg, The Netherlands. Last but not least we also thank two anonymous reviewers for their useful comments on an earlier version of the paper.

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The full LP3LP Final Report including Executive Summary [7], Main Report [8], Scientific Report [9] and Atlas of Maps [10] can be downloaded from the ESPON website under the following link: http://www.espon.eu/main/Menu_Projects/Menu_ESPON2013Projects/Menu_TargetedAnalyses/LP3LP.html

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ANNEX 1: Landscape demands from European policy objectives

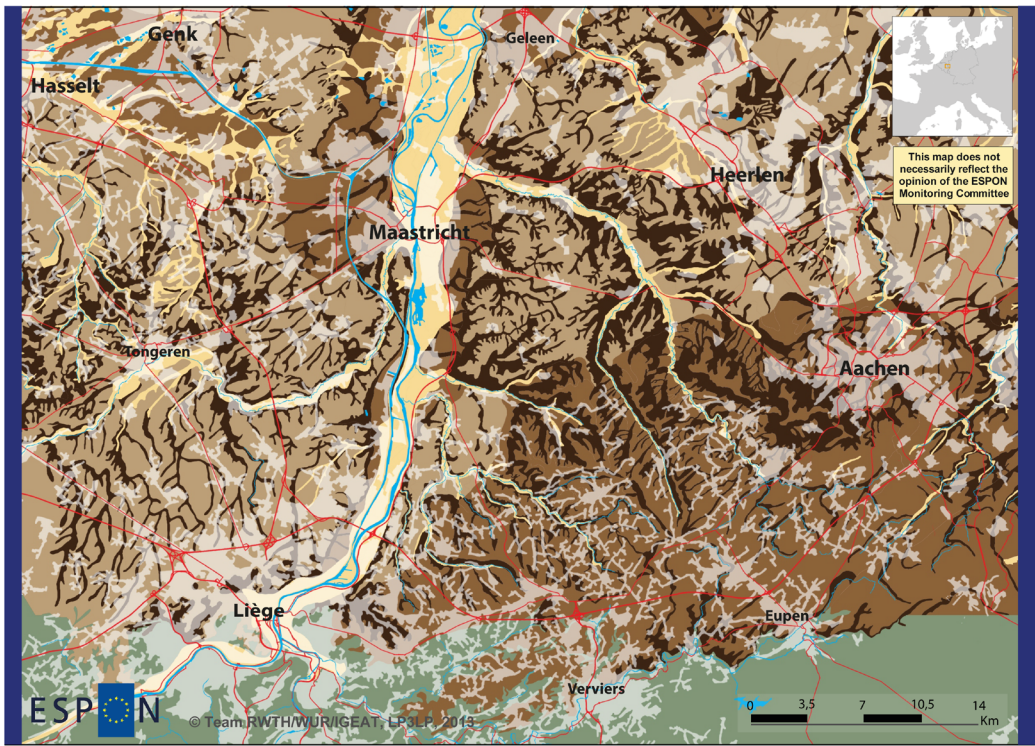
Table 1 Landscape demands arising from European policy objectives in selected policy areas [8: 24-25]

Policies	Policy objectives	Landscape demand	/ supply
EU overall strategic policy orientation			
Europe 2020 Strategy (2010) / Flagship Initiative Resource Efficiency (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
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) Provide recreational opportunities for the regeneration of productive human skills and labour force (human capital) Provide non-renewable resources for production and consumption Provide renewable resources for production and consumption (esp. bio-based economy)	Carrier Cultural Provisioning Provisioning
Flagship Initiative Innovation Union (2011), Bioeconomy strategy (2012), Action Plan Eco-Innovation (2011)		Provide site for knowledge/ innovation centers, and opportunities for knowledge generation (esp. eco-innovation)	Carrier/ cultural
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
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 Provide corridors for energy network installations (TEN-E)	Carrier/ provisioning 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 Provide public goods (e.g. farmland biodiversity, resilience to disasters) Provide attractiveness & identity (in rural regions)	Provisioning Regulating/ cultural Cultural
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

Policies	Policy objectives	Landscape demand	/ supply
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
Floods directive (2007)	To reduce adverse consequences for human health, the environment, cultural heritage + economic activity from flood risk	Provide area-wide water retention throughout the watershed Provide designated retention and flooding areas	Regulating Regulating
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 Provide sites for raw material extraction and geological and archaeological heritage sites	Regulating Provisioning/ cultural
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 Provide genetic diversity and ecosystem services	Habitat 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
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 Maintain permanent grassland (no conversion to cropland)	Regulating
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
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
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 Provide alternative, eventually land based, waste water treatment in agglomerations of < 2000 person equivalents; Metabolize treated sewage sludge on agricultural soils	Regulating Regulating

Policies	Policy objectives	Landscape demand	/ supply
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
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

ANNEX 2: Components of the landscape perspective

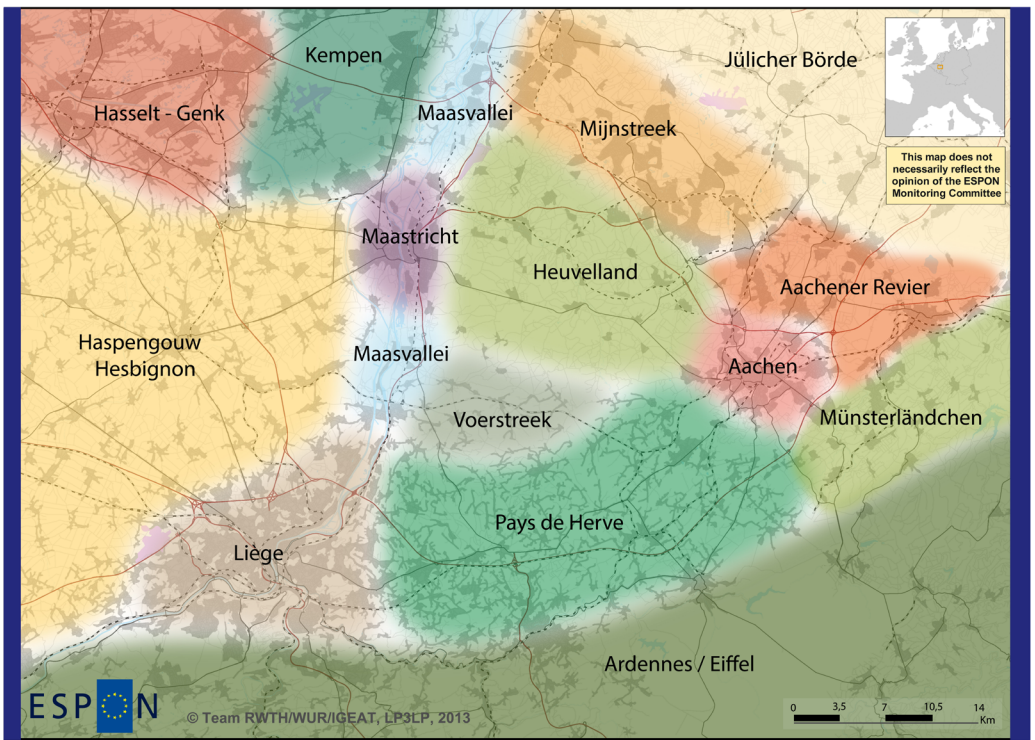


LANDSCAPE STRUCTURE

- river and valley floors
- gentle slopes
- plateau areas
- steep slopes and dry valleys
- Ardennes - Eifel massif
- urban areas
- major roads
- rivers, canals, streams

EUROPEAN UNION Part-financed by the European Regional Development Fund INVESTING IN YOUR FUTURE
 Local level: LAU 2/not to scale
 Source: LP3LP, team RWTH/WUR/IGEA
 Origin of data: Taken Landschaftsplanung 1992, EuroStreets/Geodan BV 2009, CORINE/EEA 2006

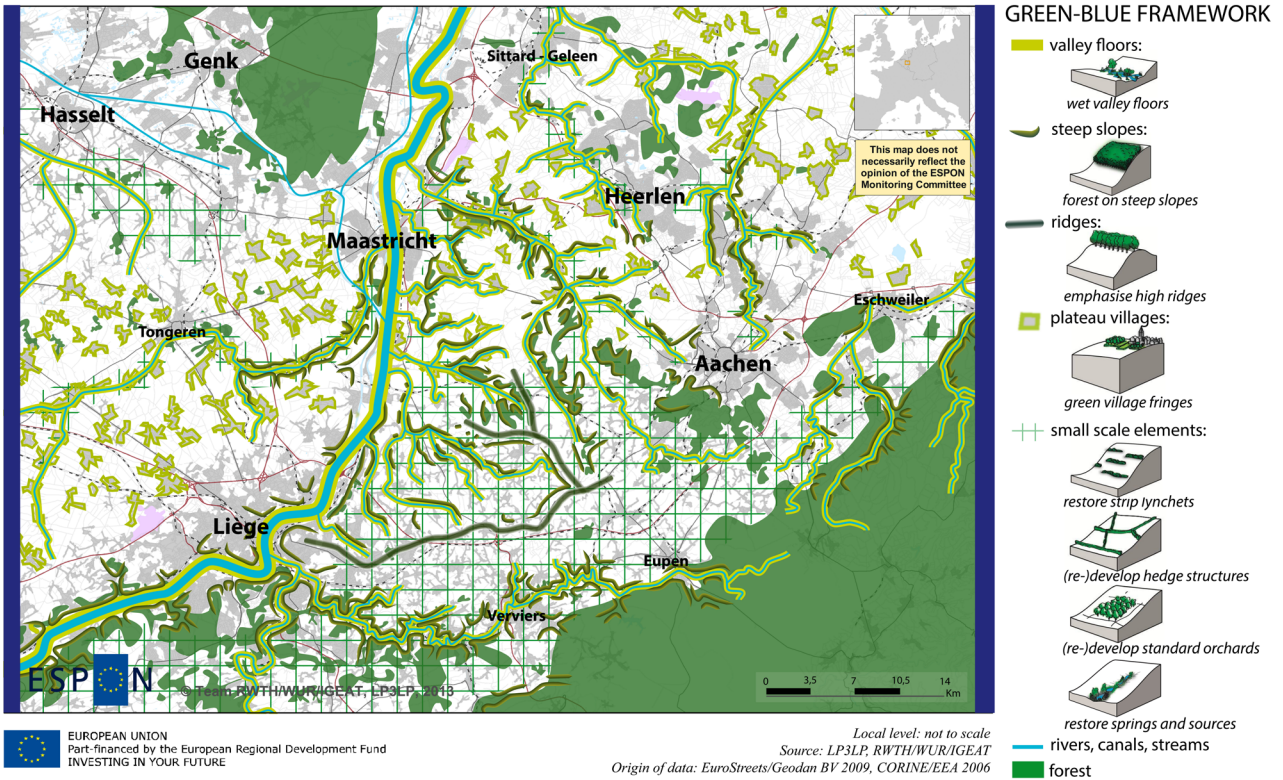
Map 1 Landscape Structure Three Countries Park [8: 42]



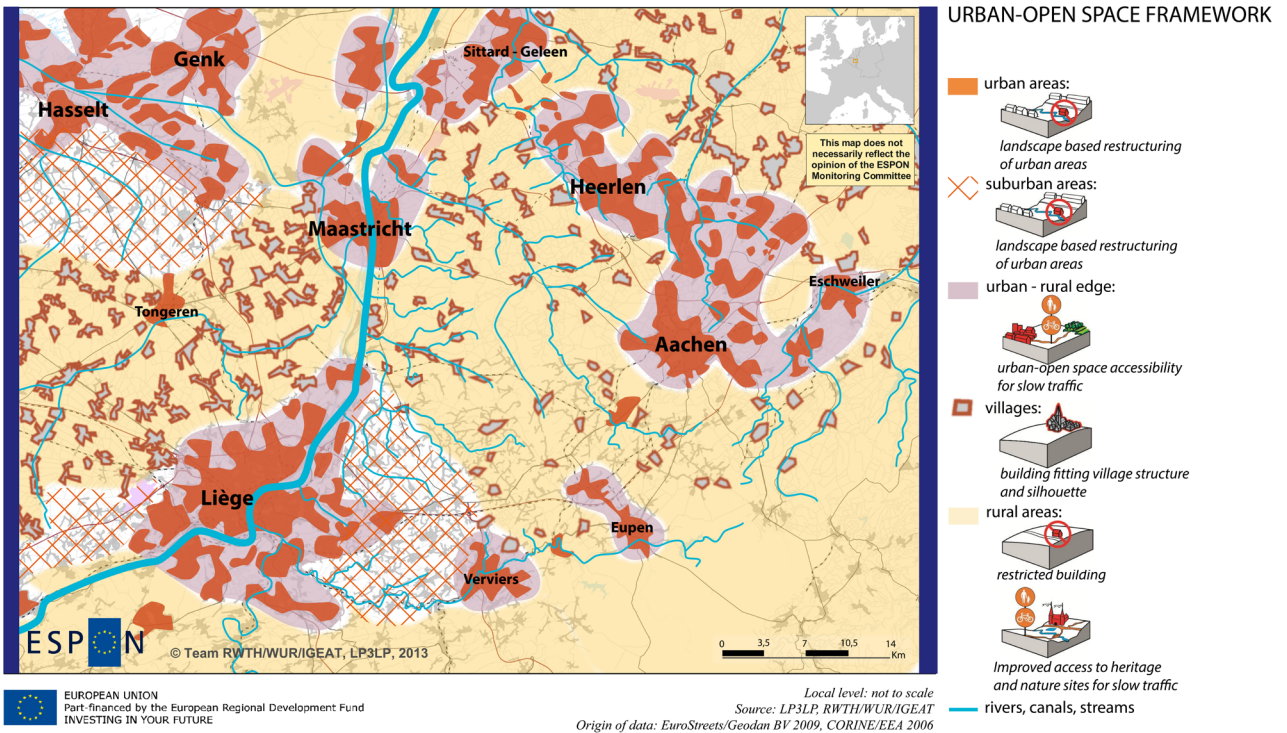
REGIONAL IDENTITIES

EUROPEAN UNION Part-financed by the European Regional Development Fund INVESTING IN YOUR FUTURE
 Local level: not to scale
 Source: LP3LP, RWTH/WUR/IGEA
 Origin of data: EuroStreets/Geodan BV 2009, CORINE/EEA 2006

Map 2 Regional identities of the Three Countries Park [8: 42]



Map 3 Green-blue framework [8: 44]



Map 4 Urban-open space framework [8: 44]