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Leisuring landscapes

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Planning for peri-urban development: towards guiding dynamic peri-urban areas in their evolution³

Abstract

This article aims to develop an enhanced understanding of the implications that dynamic peri-urban areas raise for peri-urban planning. A complexity perspective is introduced to analyse how peri-urban Vlietzone and Midden-Delfland develop to become integrated into the Greater Hague Region, the Netherlands. The case study shows that both peri-urban areas are in the process of changing fundamentally in terms of structure and function. Whereas strategic spatial planning strongly shapes development paths, peri-urban development is also shaped by the interplay of actors at multiple governance levels and processes at multiple spatial scales. From a planning perspective, many of these processes are difficult if not impossible to control completely and affect peri-urban development in a relatively 'autonomous' manner. The consequence is that guiding peri-urban areas in their evolution requires the co-evolution of strategic planning. In this context, the article draws attention towards the importance of developing a situational understanding of peri-urban dynamics.

Keywords

Complexity, peri-urban, strategic planning, urban region

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Introduction

When the urban and rural intertwine, overarching urban regions emerge and clear demarcations between the traditional urban and rural tend to blur over time (Douglas, 2006; Hoggart, 2005). Improvements in terms of infrastructure, transportation and mobility enhance connectivity between localities and enable the dispersal of urban land uses over larger geographical scales (Hudalah et al., 2010). Rural areas within or near urban regions could provide natural and landscape amenities, and as a result experience an influx of additional land uses and activities related to recreation, tourism, leisure, care, wellness, and suburban and exurban living (Cadieux & Hurley, 2011; Gallent et al., 2004). The disappearing urban-rural dichotomies are often replaced by more irregular, fragmented landscape patterns known as peri-urban areas (Davoudi & Stead, 2002; Sieverts, 2003).

The peri-urban is characterized by a mixture of land uses associated with both the urban and the rural (Bryant, 1995; Friedmann, 1996; Hoggart, 2005; Overbeek & Vader, 2003). Moreover, peri-urban areas are dynamic areas, sometimes undergoing rapid transformations (Webster, 2002), where formerly predominantly rural areas change functionally, economically and socio-culturally because of altering relationships with nearby urban cores (Hidding & Teunissen, 2002). Qviström (2007) therefore describes the peri-urban as a transitional area with a mixture of urban and rural activities waiting to be integrated into the urban system (Zhao, 2013). However, the development paths of peri-urban areas – how places develop over time – do not necessarily progress in a gradual and uniform manner (Smith, 2014).

How peri-urban areas develop over time differs because of their diverse and dynamic nature, but also because the peri-urban is subjected to multiple diverging perceptions that relate to a variety of actors (Westerink et al., 2013; Rauws & Van Dijk, 2013). Consequently, it can contain a diversity of functions ranging from nature to housing, out-placed industries, agriculture, leisure and recreation facilities, and infrastructure (Allen, 2003; Hidding, 2006). These differences are the consequence of the varying intensity and speed of the processes driving the dynamics, and are shaped by path dependencies (cf. Markusen & Schrock, 2006), institutional structures (Mattingly, 1999) and governance frameworks (Webster, 2002). In this article, we further explore in-depth how strategic planning shapes peri-urban development. The purpose is to develop an enhanced understanding of the implications that dynamic

peri-urban areas raise for planning and governance, in order to better guide peri-urban areas in their evolution.

In the context of dynamic peri-urban areas, the adequacy of technical-comprehensive planning strategies which aim at the command-and-control of peri-urban development paths are contested (Allen, 2003; Gallent, 2006; Rauws & De Roo, 2011; Tacoli, 2003). In this article we therefore pursue an understanding that embraces the complexities and uncertainties inherent to the processes driving peri-urban development. To do so, we draw on strategic spatial planning perspectives which build on theories of complex adaptive systems (De Roo et al., 2012; Portugali, 2011). We adopt the perspective that planning objects such as cities, peri-urban areas or urban regions can develop nonlinearly: changing fundamentally over time in terms of (e.g. socio-economic, spatial-morphological) structure and function. This relates to the rise of new land uses and the attribution of alternative meanings and values to places (Hartman & De Roo, 2013). Insights from theories of complex adaptive systems are operationalized for peri-urban areas to analyse how these integrate into a larger urban region over a period of time. This conceptual framework is used to analyse the forces that drive the evolution of peri-urban areas, to examine how planning shapes peri-urban development paths, and finally to discuss the co-evolution of planning in response to peri-urban dynamics.

The urban region of The Hague, the Netherlands, provides interesting cases for this research. In this region cities, villages and their surrounding countryside interconnect in various and fuzzy ways. Peri-urban areas, for their part, are gradually integrating into the physical, organizational and institutional fabric of the wider Greater Hague Region. Our analysis focuses on peri-urban Midden-Delfland, which is evolving toward becoming a metropolitan 'leisure landscape', and peri-urban Vlietzone, which is on the brink of being urbanized. Since many planning authorities are confronted with dynamic peri-urban areas in the process of integrating into larger urban regions, the insights presented in this article can support these authorities in guiding peri-urban areas in their evolution.

The article consists of two main parts. In the first part, theories on complex adaptive systems are discussed and operationalized to assemble conceptual support for analysing peri-urban development. In the second part, the development paths are discussed of peri-urban Vlietzone and Midden-Delfland, located in the vicinity of the city of The Hague, the Netherlands. In particular we examine how planning shapes the development path of these peri-urban areas and elaborate on how planning co-evolves in response to peri-urban dynamics.

To conclude, we discuss implications for the governance and planning of dynamic peri-urban areas.

3.2

Peri-urban dynamics, complexity theories and development paths

The erosion of urban-rural dichotomies and the rise of peri-urban areas and urban regions are driven by interlocking processes at multiple levels of scale (Hidding et al., 2000; Rauws & De Roo, 2011). These include globalizing processes, such as technological innovations in transportation and communication, which trigger the provision of infrastructure and stimulate mobility. This frees people from necessarily having to live near their place of work and enables people to distribute themselves over larger geographical areas. It thus stimulates suburban and exurban living immediately outside, but still in the vicinity of the urban workplace and urban facilities (Bruegmann, 2005; Fisher, 2003; Simon, 2008). Moreover, the combination of technological progress, globalization, and the increase in welfare and free time stimulates local land uses and activities related to tourism, leisure and recreation. These factors illustrate that peri-urban development is driven and shaped by a large number of actors, events and processes on multiple levels, which are constantly interacting and adapting to each other. As a result, peri-urban areas are persistently dynamic, on the basis of which we can develop the hypothesis that it is difficult for planning authorities to command and/or control their development paths.

In this context, theories of complex adaptive systems can offer conceptual support and provide an enhanced understanding of peri-urban dynamics. Complex adaptive systems theories are increasingly being related to dynamic socio-spatial systems such as peri-urban areas, cities and urban regions, as well as enhancing planning strategies (Allen, 1997; Batty 2005; Byrne, 1998; De Roo & Silva, 2010; De Roo et al., 2012; Marshall, 2009; Portugali, 2008, 2011; Shane, 2006). In complexity theories, the notion of complexity relates to the persistent interactions between the constituent parts which give rise to circular causality, whereby cause-and-effect relationships can be difficult to reveal. The consequence is that system dynamics cannot be understood in a reductionist manner or described in their entirety (Cilliers, 2005). This is distinct

from classical, Newtonian understandings of complexity, which assume that phenomena can be reduced to their simplest components and described in a complete, objective and deterministic manner (Heylighen, 2008). Accordingly, rather than focussing on or predicting the exact outcomes of system dynamics, complexity theories tend to address mechanisms that underlie their dynamic nature (O'Sullivan et al., 2006). Let us briefly discuss key insights from complexity theory and elaborate on how these are useful to peri-urban development and planning.

Complex adaptive systems are open systems because they are embedded in a dynamic contextual environment to which they constantly interact (De Roo, 2012). This could be seen, as Byrne (2005) explains, that complex adaptive systems “are nested in, have nested within them, and intersect with other complex systems’ and emphasizes that this does not equal hierarchy because interaction ‘runs in all possible directions, not just top down” (p. 205). For socio-spatial systems such as cities and peri-urban areas these include amongst others socio-cultural, technological, economic, institutional and political systems (Martens & Rotmans, 2005). Complex adaptive systems feature the capacity to persistently adapt to changing contextual circumstances. In turn, the notion co-evolution is used to describe the process when adaptation in one system triggers adaptation in another, and vice versa (Gerrits, 2008).

The adaptive capacity of complex systems relates to the ability of constituent parts/agents of a system to alter their characteristics, relationships and interdependencies over time (Cilliers, 2005; Heylighen, 2001; Garnsey & McGlade, 2006). Out of these local interactions and adaptive responses, macroscopic structures are produced, a development process for which it is difficult to tell whether something or someone is in complete control (Allen, 2012). The process of adaptation means that a system’s structures and functions may alter and fundamentally transform over time (see Lash, 2003). Structures created in the past, however, do shape system characteristics and, in turn, enable and/or constrain particular paths into the future (Manson & O’Sullivan, 2006; Martin & Sunley, 2007). The development process of altering and transforming the structures of complex systems is also referred to as a transition, and is conceptualized as a shift from one relatively stable structure to another (Geels, 2010; Rotmans, 2001). In other words, the development paths of dynamic, adaptive systems can evolve nonlinearly, fundamentally changing in structure and function, as a result of their openness and the persistent interactions between their constituent parts (cf. Hartman & De Roo, 2013).

A complexity perspective on peri-urban development paths

In this section we argue that conceptualising peri-urban areas as complex adaptive socio-spatial systems can provide analytical leverage on the evolution of peri-urban development. First, peri-urban areas can be conceptualized as ‘open’ and ‘nested’. Peri-urban areas are constantly interacting with their contextual environment. For instance, it is amongst others affected by (multilevel) systems of politics and institutions, global economic systems and the dynamics of larger scale socio-spatial systems such as the urban region of which they are part. Second, at the local peri-urban level individuals, organizations and institutions are constantly responding to changing circumstances. Changing circumstances can result in new development opportunities and urgencies to act, and therefore provide reasons to adapt and depart from the development paths of the past. When peri-urban development is affected by multiple actors, process and governance levels, it could be (come) difficult to tell whether someone or something is in complete control. Third, peri-urban areas may change over time in terms of structure and function (e.g. socio-economic, spatial-morphological), and thereby exhibit transitions. In other words, the peri-urban can shift from one relatively stable stage to another. Following the argument that peri-urban areas are waiting to be integrated into larger urban regions, developed in Qviström (2007), we can distinguish three stages: the urban-rural divide, the urban-rural connection and urban-rural integration (cf. Gieling & De Laat, 2004; Shane, 2005; 2006). This set of three consecutive stages of urban-rural relationships refers to the emergence of peri-urban areas and the subsequent process of blending them into urban regions. It highlights that the distinction between the urban and the rural becomes increasingly blurred over time, which helps us to characterize and analyse how peri-urban development paths evolve over time.

- The urban-rural divide concerns an unambiguous functional and morphological distinction between the urban and rural. This is most apparent, for example, in medieval cities with defence walls clearly demarcating the city from its surroundings or where densely populated urbanized areas and rural, agricultural areas alternate abruptly and develop largely back-to-back, independent of each other. In this case, a peri-urban is largely non-existent.
- The urban-rural connection relates to the expansion and sprawl of cities. This was fuelled by the industrial revolution, technological innovation, specialization and production efficiency, where employment clustered

in cities, which grew exponentially. Fostered by improvements to infrastructure, transportation and mobility, previously established urban-rural dichotomies or restrictions such as defence constructions were rendered obsolete. In this stage, the peri-urban contains multiple rural as well as urban-oriented functions.

- The urban-rural integration draws on the dispersal of functions and activities as well as cultures and lifestyles over large areas, well beyond the urban core. It refers to situations where cities and their nearby countryside become fused. This could include urban development, but could also result in a patchwork of distinct but interdependent places which functions more or less as a cohesive entity (Scott, 2004; Tacoli, 2003). Hartman et al. (2011) argue that, for instance when peri-urban areas are transformed into urban parks, a gradient from high to low dynamic urban places becomes a more valid distinction than the traditional urban versus rural.

These three stages seemingly suggest that all peri-urban areas will become integrated into the fabric of their surrounding urban regions at some point, due to the interplay of processes driving development. However, it is not a fixed model predicting specifically when integration will happen. And, it does not predict beforehand how the evolution of peri-urban development paths becomes spatially manifest. In this article, the set of stages mainly serves an analytical purpose. It structures our case study research – as is explained in the next section – and it allows us to discuss how the complexity theory perspective offers analytical leverage on peri-urban development. Because the set of stages is not bound to a particular scale of peri-urban area, being applicable to areas which differ in size (as is shown in section 4 and 5), it is therefore also useful for analysing peri-urban dynamics in different urban regions.

In the subsequent sections we discuss how the complexity framework presented above contributes to analysing processes that drive the evolution of peri-urban development paths. The complexity perspective provides conceptual support for understanding the mechanisms behind peri-urban areas integrating into larger urban regions. For instance, the notion of co-evolution is used to discuss the interactions between dynamic peri-urban areas (a socio-spatial system) and changes in (the system of) spatial planning. As our case study findings will show, spatial planning interventions may strongly shape peri-urban development paths but are at the same time unable to render peri-urban areas completely immune to dynamics due to the open, nested character of the peri-urban and the multilevel, complex nature of processes driving peri-urban development. In turn, forces driving peri-urban development may trigger actors to develop and/or adapt their strategic planning perspectives on spatial development. Finally, this

allows a discussion on the co-evolution between the development of peri-urban areas and spatial planning.

3.4

Analysing development paths of peri-urban areas in the GHR

The complexity perspective and the three stages (divided-connected-integrated) presented above served as a guide for analysing the forces driving the evolution of peri-urban development paths. As such, we analysed the evolution of peri-urban areas in time (examining the impact of path dependencies on the present and future), in context (interlinking events and adaptive responses at the local, the peri-urban system and the contextual environment), and considered the interplay between multiple dimensions (addressing spatial, organizational and institutional aspects) (cf. Hartman et al., 2011). This approach allows discussing the co-evolution of the development of peri-urban areas and spatial planning and, and articulate how this interplay shapes peri-urban development paths.

This article analyses peri-urban Vlietzone and Midden-Delfland, both situated within the administrative borders of the Greater Hague Region (GHR), the Netherlands (see Figure 3). The analysis focuses on forces driving the integration of the peri-urban areas into the wider GHR, and on factors that shape how this integration is becoming spatially manifest. The analyses cover the post-Second World War period from the 1950s and onwards. As such, the analyses are largely limited to the shift wherein urban-rural connections are enhanced and the state wherein the peri-urban areas are being extensively integrated into the GHR. Qualitative research methods were selected as these allowed us to clarify how and why interactions between peri-urban dynamics and spatial planning occur. This approach fit the paper's aim as it allows for a discussion on planning implications for guiding peri-urban areas in their evolution.

A document analysis was performed first, structured by the three stages (divided-connected-integrated), to identify key events and sketch the outlines of the peri-urban development paths of Vlietzone and Midden-Delfland (cf. Chell, 2004). This provided a detailed insight into the characteristics of the peri-urban areas and how these changed over time. Subsequently, 18 semi-structured interviews were conducted. On the one hand to cross-check and supplement findings in secondary sources and on the other hand to reflect on how spatial planning interventions shape peri-urban development paths, and to



Figure 3: The location of Vlietzone, Midden-Delfland and the administrative borders of the GHR

examine whether planning is co-evolving in response to peri-urban development. Interviewees were professionals in the field of planning and policymaking, local politicians, members of NGOs, real estate developers and social scientists. The interviewees were selected on the basis of their knowledge about or involvement in peri-urban development and planning interventions. Snowball sampling was also used to recruit interviewees who could provide in-depth and comprehensive insights. The research findings are discussed in the following sections.

3.5

Peri-urban Midden-Delfland integrating into the GHR

The peri-urban area Midden-Delfland is located between The Hague, Rotterdam and Delft (Figure 3) and nested within the Greater Hague Region (GHR). In contrast to surrounding areas, Midden-Delfland is not urbanized or otherwise built-up. However, it is gradually transforming from a predominantly rural, agricultural area to a leisure-oriented metropolitan park (cf. Hof van Delfland Raad, 2010). To date, it remains a distinct socio-spatial system nested in the larger system of the GHR. Over the last decades the area is more extensively integrating into the GHR, a process that is driven by changing contextual circumstances and local adaptive responses. As a result, it is gradually changing in terms of structure and function. In this section we analyse the forces driving and shaping this transition-in-progress.

Using the complexity perspective as a guide for analysing the evolution of Midden-Delfland, we identified how a range of factors at multiple governance levels, including spatial planning, affect development options and thereby shape the development path of peri-urban Midden-Delfland. This analysis brings us to the conclusion that planning for peri-urban development involves addressing (potentially) volatile situations to which planning needs to co-evolve. The findings are grouped in three phases, each marking a distinct period in the integration of Midden-Delfland into the GHR.

Phase 1: Urban growth and macro institutional interventions

The reconstruction period after the Second World War is illustrative for Midden-Delfland being nested within a multilevel socio-spatial system that includes other nearby areas and the larger GHR. Developments within this system affect the ways in which the development path of Midden-Delfland is evolving. Many areas within the GHR experienced rapid urban growth after the war. This process was reinforced by the affordability of cars, infrastructure development, and the enhanced (auto)mobility. Figure 4 shows the expansion of nearby urban cores and large-scale greenhouse development in the area surrounding Naaldwijk. However, the fact that Midden-Delfland is not urbanized, used for greenhouses or otherwise built-up, as has been the case in surrounding areas, relates to decisions that were made topdown in governance systems of national politics and institutions.

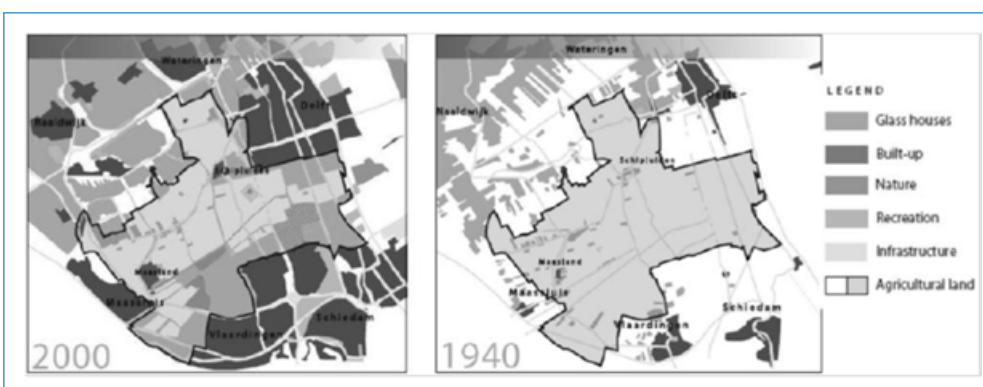


Figure 4: Dynamic spatial context of Midden-Delfland (Municipality of Midden-Delfland, 2005)

The development path of Midden-Delfland has considerably been shaped by a set of strategic planning interventions. Over time, in response to rapid urban growth –occurring throughout the Netherlands near large cities – a macro

institutional framework emerged that strongly shaped the spatial development of Midden-Delfland. It quite successfully prevented urbanization and greenhouse development and preserved a predominantly rural, agricultural area.

- First, in 1958 the ‘Westen des Lands’ committee of the Netherlands state planning agency proposed to establish ‘buffer zones’ (comparable to greenbelts) to curtail the potential of excessive urban sprawl. Accordingly, as a top-down intervention the Dutch national government declared Midden-Delfland a buffer zone to prevent The Hague, Delft and Rotterdam from merging and forming a monotonous urban field. In addition, the committee argued that a buffer zone would ensure open space for agricultural, recreational and leisure purposes.
- Second, the Dutch national government’s spatial planning schemes of 1960 and 1966 required that several cities and villages throughout the Netherlands should be declared ‘growth centres’ to concentrate urbanization into predefined places. Zoetermeer in the GHR is one such centre (Figure 3). Growth centres permitted keeping the landscape open, meeting the demand for housing relatively quickly and controlling mobility by providing efficient public transportation.
- Third, in 1977 the national government enacted the ‘Reconstruction of Midden-Delfland Act’. While the Act’s force was limited to a period of 30 years, until 2008, it provided for this period the financial resources and legislative support to sustain the region’s openness, to strengthen its agricultural sector, heritage and cultural-historical values, and to support recreational uses and touristic development (Van Rij et al., 2008).

This top-down approach to commanding and controlling development paths fits the technical-comprehensive tradition in Dutch planning, the dominant planning paradigm at that time (Faludi & Van der Valk, 1994). The financial, administrative, political and legislative support enabled privileging some land uses over others, preventing the urbanization of Midden-Delfland. These planning interventions would strongly shape the development path of Midden-Delfland. However, as is discussed below, these could not render the area immune to dynamics, due to the open and nested character of the peri-urban and the impact of contextual processes.

Phase 2: Forces that change the structure and function, and planning adaptation

Interviewees highlighted that major driving forces for the integration of Midden-Delfland into the GHR relate to the declining economic position of the

agricultural sector, the increasing societal relevance of urban green spaces and the emerging societal interest in the 'leisure economy' (tourism, recreation and leisure). These driving forces are development processes that take place amongst others in socio-cultural and economic systems that are part of the peri-urban system its contextual environment. Actors that are part of, or intend to govern, the peri-urban were unable to influence such processes, but because peri-urban areas are open systems these actors were confronted with implications to which they needed to adapt. As a result of these interactions, and in line with theories on complex adaptive systems, Midden-Delfland engaged in a transition process, gradually changing in socio-economic structure and serving a new function in the GHR.

First, the economic viability of the agricultural sector declined due to difficulties in acquiring a competitive position in international markets. The opportunities for land consolidation or expansion to generate economies of scale in Midden-Delfland were increasingly restricted in favour of preserving landscapes, cultural heritage and nature. As a result, farmers were to a certain extent forced to look for alternative sources of income. Second, the interest in tourism, leisure and recreation increased strongly in the Netherlands from the 1950s onwards, also because of the increase in welfare and free time (cf. Woestenberg, 2009). The openness and relative proximity to urban cores made Midden-Delfland suitable for leisure-related land uses and activities. The demand for the construction of recreation facilities put pressure on the urban-rural divide that characterized Midden-Delfland.

In this context, an emphasis solely on agriculture would not have been sustainable from economic or societal perspectives. Midden-Delfland its spatial structure (open, green and rural), however, also offered development opportunities, particularly in combination with the increasing societal interest in leisure-related land uses and activities. In turn, the emerging leisure economy offered opportunities for resolving planning issues related to the declining viability of the agricultural sector. Examples include the increasing pressure on maintaining characteristic buildings, landscapes, landscape elements, nature, and ecology. In response to this changing situation, farmers and other entrepreneurs (were allowed to) introduce (side-)activities in tourism, recreation, education and care.

The above highlights that the transition from an agricultural to a leisure-oriented economy is the result of the interplay between actors and processes in (sub)systems at multiple scales. It indicates that the development path of Midden-Delfland is in the process of evolving nonlinearly: from an (quantitative)

orientation on agricultural production to an (qualitative) orientation on landscape quality and the leisure-economy. This transition gained momentum partly due to entrepreneurs adapting to changing contextual circumstances and engaging in processes of self-organization, establishing businesses and activities relating to the leisure economy. Furthermore, this transition is reinforced by the following changes in systems of planning and institutions:

- Government agencies constructed recreation and leisure facilities such as football pitches and tennis courts – in line with Reconstruction Act and as a part of the reconstruction. The facilities were deliberately constructed close to the edges of nearby cities because ad hoc development could harm the area's characteristics and trigger further urbanization (cf. Bervaes, 2001).
- A landscape fund has been established to compensate farmers for the maintenance of nature and the provision of educational and recreational services.
- A coalition of municipalities, provinces and state ministries financially support the removal of scattered and outdated greenhouses.
- The municipality of Midden-Delfland has become part of the international 'Citta Slow' network. The label 'Citta Slow' reflects that actors within the region are committed to preserving and enhancing the area's small-scale and local environment, heritage, products and cultural qualities. This label is used for branding and marketing purposes.
- The municipal borders within the GHR were adjusted in 2004, which proved an important stimulus for avoiding urbanization. Areas with uniform spatial characteristics (urbanized, greenhouses or open) became institutionalized units, in this case municipalities, implicitly reconfirming as well as reinforcing their spatial differences.

On the one hand, these measures steer peri-urban development in the sense of privileging and supporting particular land uses (tourism, recreation, leisure, nature and agriculture) over others (industry, offices, housing and greenhouses). On the other hand, the policy attention towards the open, green, leisure function of Midden-Delfland indicates the co-evolution of planning in response to changed circumstances. The result is a further progressing integration of Midden-Delfland into the fabrics of the GHR. This is a complex process in which it is difficult, if not impossible, to tell whether something or someone is in control. The result is that Midden-Delfland is evolving gradually into a leisure-oriented metropolitan park as a result of a set of autonomous contextual changes, local impacts and a combination of planned interventions by institutions and self-organized responses by entrepreneurs.

Phase 3: Changing institutional framework and planning adaptation

The macro-institutional system is clearly shaping the spatial development of Midden-Delfland. Hence, the expiration of the temporary 1977 Reconstruction Act in 2008 could have had major consequences. The expiration meant a reduction of financial resources to invest in nature and leisure as well as in legislative support for avoiding urbanization and greenhouse development. Changing the institutional system could therefore alter development options and present new development paths to Midden-Delfland. In this context, interviewees highlighted that the expiring Reconstruction Act was accompanied by the concern that Midden-Delfland would not be further developed as a leisure-oriented area complementing the development of the predominantly urbanized GHR region. This concern relates to the underlying rationale that without the reconstruction Act, Midden-Delfland would be more exposed to market forces and would become urbanized due to the strategic location near urban cores and relatively low land prices.

The expiring Reconstruction Act and the ambition to retain the open character of Midden-Delfland triggered a series of adaptive response by local actors, that gave rise to the emergence of an alternative governance framework. The project 'Mooi en Vitaal Delfland' [Beautiful and Vital Delfland] was initiated, chaired by a local politician from the municipality of Midden-Delfland and the minister of Agriculture, Nature and Food Quality. This project builds on the legacy of the Reconstruction Act, by making use of institutional memory and the established actor network. It led to the municipal and provincial representatives being united in the Council of the 'Hof van Delfland' [Courtyard of Delfland]. The council aims to improve accessibility and enhance connections to regional infrastructure, nature and water networks. Enhancing connections between Midden-Delfland and other un-urbanized areas reduces fragmentation and contributes to a continuous nature and leisure-oriented zone which spans the GHR. In this process, the council operates as an organizational platform that aims to unite and mobilize public and private actors to further develop the area according to the area's published strategic vision (Hof van Delfland Raad, 2010). The name 'Hof van Delfland' is introduced to label the network of green spaces within the GHR of which Midden-Delfland is part, and is now also used as a brand to market the contiguous area. Clearly, the establishment of the 'Hof van Delfland' is a (self-organized) adaptive response to changing circumstances, which contributes to the further development and integration of Midden-Delfland into the GHR.

Whereas Midden-Delfland could integrate variously, for instance by becoming metropolitan parks or urban extensions, planning interventions strongly shaped the spatial form in which this process materialized. The chain of events discussed above suggests that Midden-Delfland is likely to be further developed as a metropolitan leisure-oriented landscape. It indicates the progressive integration of Midden-Delfland into the spatial, organizational and institutional fabric of the wider GHR, although the peri-urban remains a distinct socio-spatial system. The area complementary to the largely urbanized GHR, contributing to liveability and attractiveness by providing nature, open space, leisure and recreation facilities – factors that are increasingly relevant to satisfying contemporary societal needs.

Reflection: how planning co-evolves to peri-urban dynamics

The case study shows how the development path of peri-urban Midden-Delfland is shaped by the interplay of processes at various governance levels. In this context, the complexity perspective offers analytical leverage: Midden-Delfland is engaged in a persistent process of adapting to changing circumstances. The interplay between actors and processes at multiple levels, including spatial planning, determines how the peri-urban area develops. Whereas the case study shows that Midden-Delfland has potentially multiple ways to integrate into the GHR, through strategic spatial planning some are privileged and supported (tourism, recreation, leisure, nature and agriculture) over others (industry, offices, housing and greenhouses). In this way, Midden-Delfland is complementary to the development of the larger GHR. Without planning the integration of Midden-Delfland would likely have involve urbanization and greenhouse development, as has been the case in surrounding areas. Avoiding the urbanization of Midden-Delfland, however, created a specific situation that came with its own dynamics. The combination of an urbanizing GHR, an emerging leisure economy and the preserved rural character of Midden-Delfland generated new land use claims and potential for uses related to recreation and leisure.

These changing circumstances triggered the co-evolution of planning strategies and governance frameworks, as reflected amongst others by the development of leisure facilities and a new governance structure ('Hof van Delfland'). These findings suggest that Midden-Delfland is moving toward a relatively stable state, becoming a leisure-oriented metropolitan park. However, both the case study and the complexity perspective highlight that development paths are continuously being renegotiated and are therefore peri-urban areas are likely to remain in flux. Hence, planners need to develop the capacity to co-evolve: adapt

when changing circumstances affect development options for peri-urban areas and reorient development paths.

3.6

The integration of peri-urban Vlietzone into the GHR

The peri-urban Vlietzone, located in the east of The Hague (Figure 3) is in the process of integrating into the GHR, transforming from a predominantly rural area to a highly multifunctional area. Whereas the area was nearly urbanized, recent events indicate that the area will be further developed as a leisure zone for, and between, relatively high dense neighbourhoods. This process of progressing integration is analysed in this section. On the basis of the complexity perspective we discuss how a range of factors at multiple governance levels, including spatial planning, affect development options and thereby shape the development path of peri-urban Vlietzone. The analysis brings us to the conclusion that planning for peri-urban development involves addressing (potentially) volatile situations to which planning needs to co-evolve. The findings are grouped in three phases, each marking a distinct period in the integration of Vlietzone into the GHR.

Phase 1: Forces driving urban growth and ad hoc planning responses

Until the 1960s, connections between Vlietzone and the GHR were scarce. The 'Vliet' canal marked the edge of the urban, although it featured historic estates which were built to overlook the Vliet canal and the reclaimed polder landscapes (Haags Milieucentrum, 2004). From the 1960s on the area gradually became peri-urban. A mixture of different types of land use was introduced, which increased the connections between the Vlietzone and the nearby cities of The Hague and Voorburg. This transition is driven by a series of events and processes at different governance levels, such as decisions made in the governance systems of national politics and state institutions.

The development path of Vlietzone changed dramatically due to contextual processes such as urban growth in the GHR, an increasing mobility demand by society, and the need for highways. In the 1940s the 'A12' highway from The Hague to Utrecht was constructed followed by the 'A4' highway from Leiden to Rotterdam via The Hague in the 1950s. This produced a zone between the highways and the Vliet canal that is now known as the Vlietzone. These events affected the development path of Vlietzone, which had until then been

dominated by agriculture. Entrepreneurs and local municipalities adapted to the changing circumstances, providing them with opportunities to further develop the area. Accordingly, in response to the topdown decision of the state to construct the 'A12' and 'A4' highway, a variety of land uses and activities was gradually established. These include agriculture, allotments, industry, housing, a golf course, football pitches, tennis courts, a small theme park, cycle tracks and parks.

In this phase the impact of planning on shaping the spatial development of the peri-urban area mainly consisted of permitting land use change. This occurred, however, in a relatively ad hoc manner. Vlietzone became a more multifunctional but also a rather fragmented peri-urban area lacking a clear identity and development direction. Nevertheless, it did enhance connections and thereby contributed to the process of further integrating Vlietzone into the fabrics of the wider GHR.

Phase 2: Macro institutional decisions triggering local adaptive responses

In the 1990s, a series of contextual events took place in the systems of politics and governments that affected the development path of Vlietzone. A major factor driving change was the Dutch House of Representatives adopting a resolution in 1997 to adjust municipal borders in the GHR (Verhoeven, 2007). The planned 'Forepark' business park and two large housing developments 'Leidschenveen' and 'Ypenburg' (for 20,000 and 30,000 inhabitants, respectively) would be integrated into the municipal borders of The Hague. As a part of the adjustment plan, Vlietzone would also be transferred from the municipal territories of Rijswijk and Leidschendam to The Hague. Interviewees argued that many actors thought that the border adjustments would severely change the development options of Vlietzone and thereby strongly shape its development trajectory. For instance, Vlietzone could be a potential site for housing and offices to increase employment and municipal revenues of the city of The Hague (Verhoeven, 2009). In response to the adjustment plan actors at the local and regional level engaged in debates about how to further integrate Vlietzone into the wider GHR.

Interviewees argued that the prospect of Vlietzone becoming extensively integrated ignited an 'emotional' debate about how this integration should be realized spatially, emphasizing the multiple ways for doing so. These debates and subsequent actions could be seen as part of adaptive responses, being triggered by autonomously changing circumstances and aimed at influencing

the peri-urban development path. Social movement organizations were established and various governmental authorities redirected their actions, all aiming to prevent the area from becoming largely built-up and aiming to exert influence on or to participate in the City Council of The Hague's decision-making process. A number of strategic spatial plans were drafted by various institutions, conceptualizing a range of perspectives on potential development paths from areas almost entirely dedicated to nature and recreation to densely built-up ones.

- The municipalities of Leidschendam, Nootdorp, Pijnacker, Rijswijk and Voorburg jointly drafted the 'Vliet and Hofland' plan in 1999. The plan proposed minimal construction and emphasized protecting nature and cultural-historic values, since these represent important features for the quality and liveability of the surrounding, largely urbanized areas (Municipality of Rijswijk, 2001).
- Stadsgewest Haaglanden, a cooperative body of nine municipalities within the GHR, drafted a Regional Structure Plan in 2002 and a detailed development plan for Vlietzone in 2005. Both plans contained a similar description to the 'Vliet and Hofland' plan (Greater Hague Region, 2005).
- The province of Zuid-Holland issued a strategic spatial vision in 2003, acknowledging the area's potential for urban development but also adding that the area should be connected to region-wide networks of water and nature (Province of Zuid-Holland, 2003).
- The municipality of The Hague issued a strategic plan for Vlietzone in 2005, which formed a strong contrast to what had been expected by surrounding municipalities. Inspired by the strategic location of Vlietzone, offering opportunities for urban development, the plan included 7350 houses, offices and industrial and service developments (Municipality of The Hague, 2005a; 2005b).

The Municipality of The Hague's plan reflects a fundamentally different conceptualization of the integration of Vlietzone into the GHR, compared to the other strategic plans. Local municipalities, social movement organizations and inhabitants disagreed with the strategic plan (Municipality of The Hague, 2005c; 2005d). Concerns were stressed about cultural-historical and natural elements, the importance of the area for recreation and leisure activities, and the role of Vlietzone as a buffer between the existing and the planned neighbourhoods of Leidschenveen and Ypenburg.

In response to the largely self-organized adaptive responses by local actors, governments operating at the regional level co-evolved, in turn, by adapting their plans. Subsequent plans indicate that compromises have been made, as is discussed below. Nevertheless, a social movement organization has recently published a strategic vision to resist urbanization, aiming to trigger further co-evolutionary responses by local and regional planning authorities.

- The municipality of The Hague drafted a detailed plan for the Vliet/A4-highway in 2006 which displays compromise in paying more attention to recreation and connecting nature and water to regional networks. In the plan, high density developments are still considered desirable to benefit from Vlietzone's strategic location and essential for the financial viability of the proposed plan (Municipality of The Hague, 2006).
- The second Regional Structure Plan issued in 2008 by the regional cooperation body 'Stadsgewest Haaglanden' contains a similar compromise (Greater Hague Region, 2008). The plan argues that the location characteristics of Vlietzone generate potential for high density developments and promotes the better integration of existing waterways and nature areas into the fabric of the wider GHR to support recreational purposes. It adds that (out-placed) industrial developments should not be allocated because they do not harmonize with the area's amenity values.
- The social movement organisation 'Houdt Vlietrand Groen' [Keep Vlietzone Green] published the 'Groenvisie Vlietzone/A4' [Green vision Vlietzone/A4-highway] in 2012 to articulate the complementary value of an open, relatively un-urbanized area in a predominantly urbanized region. The plan aims to extend the complementary value of Vlietzone to a wider region, by further developing the area as a robust green zone that is well connected to nearby urban areas.

The first two phases indicate that the integration of Vlietzone is driven by a range of factors at multiple governance levels, but also that its development path is shaped by strategic plans, the controversies these produce, and the ways in which planning authorities co-evolve to local responses. Furthermore, also the financial crisis since 2008 affects the peri-urban development path in an autonomous manner, and triggers a chain of adaptive responses at the local and regional level.

Phase 3: The impacts the financial crisis

The financial crisis reveals that the plans proposing to extensively urbanize Vlietzone were too ambitious. The crisis severely affects the market for housing and office projects. The process of integrating Vlietzone further into the fabric of the GHR has come to a relative standstill. This situation was reinforced in 2011 when the Municipality of The Hague decided in the context of its urban development programme to suspend large investments in Vlietzone for at least ten years (Municipality of The Hague, 2011). Moreover, the Municipality adopted an ordinance in 2011 to regulate land use change. Enforced by the ordinance, the current state of affairs is preserved as it constrains major land use change, and conditions for development have been introduced through its declaration of Vlietzone as a historic estate zone. The financial crisis underlines that peri-urban development is situation dependent, and that peri-urban planning addresses potentially volatile peri-urban development processes to which it needs to co-evolve.

Reflection: how planning co-evolves to peri-urban dynamics

The case study shows how the development of Vlietzone is affected by multiple coexisting and conflicting perspectives on how the peri-urban 'fits best' into the wider GHR. Furthermore, the findings emphasize that its development depends on the dynamics of the multiscale and multidimensional (spatial-morphological, organizational and institutional) situation in which it is found. For instance, urban expansion and border adjustment accelerated integration, while the financial crisis and institutional fragmentation have tended to inhibit it. This implies that there is not someone or something in complete control of peri-urban dynamics, similar to complex adaptive systems. Accordingly, peri-urban planning could address potentially volatile situations, and planning need the capacity to co-evolve to respond to forces affecting peri-urban dynamics. At the moment, the area is situated on the brink of being further integrated into the fabric of the GHR. Due to the impact of the financial crisis, it remains to be seen how and when – or even if – it will be urbanized. On the basis of recent events, the emphasis is put on leisure and nature, whereby Vlietzone remains a distinct socio-spatial system nested within the GHR that serves as a buffer zone between nearby densely built-up neighbourhoods.

3.7

Discussion

The aim of this article is stated as developing an enhanced understanding of the implications that dynamic peri-urban areas raise for peri-urban planning, to better guide peri-urban areas in their evolution. Theories of complex adaptive systems were operationalized to develop an analytical framework for examining how peri-urban development paths evolve and how planning shapes peri-urban development. It draws attention towards developing a situational understanding, analysing the development of a specific peri-urban area in time, in context and taking into account multiple dimensions (spatial-morphological, organizational and institutional). The complexity framework is used to discuss the factors that drive the integration of peri-urban Midden-Delfland and Vlietzone and the factors that shape their development paths.

The case studies elaborate on how peri-urban development paths are shaped by the interplay between planning interventions and development processes at multiple governance levels and spatial scales. This interplay brings peri-urban areas in the process of evolving from the stage urban-rural connections to a stage where the peri-urban is more extensively integrated into the spatial-morphologic, organizational and institutional fabric of the GHR. It produces forces that trigger actors at the local and regional level to adapt land uses, physical structures, functional patterns, usages and values, as well as local and regional relationships. For Midden-Delfland, this results in a shift from a predominantly rural area towards a metropolitan leisure-oriented landscape. Vlietzone, this has resulted in a somewhat fragmented, multifunctional area that could, due to the impact of the financial crisis, become further developed as a green and leisure-oriented buffer zone between relatively densely built-up neighbourhoods.

On the basis of the case studies, the following insights can be distinguished that are important when aiming to guide peri-urban areas in their evolution. First, peri-urban areas are open and nested socio-spatial systems that constantly interact with and adaptively respond to a dynamic contextual environment. Some processes driving peri-urban development occur autonomously from a planning perspective. Some of these enable development and drive peri-urban integration such as urban growth in the GHR and the emergent leisure economy, while others inhibit dynamics such as the financial crisis. Hence, situations are persistently changing, which makes the speed, intensity and character of peri-urban development variable. Second, because peri-urban areas are open

and nested systems and development paths may alter over time, planners are challenged to adaptively respond to the persistently changing options for peri-urban development. The case studies have provided several examples of how actors and institutions reflect on, learn from and adapt to factors such as urban growth, the emerging leisure economy, and institutional changes. As such, the case studies highlight that planners and planning authorities are challenged to co-evolve to the dynamics of peri-urban systems. In this context, this article draws attention towards the benefits of developing a situational understanding, as is done for the peri-urban areas in this article. This approach can contribute to an enhanced understanding of forces driving peri-urban development, and the ways in which peri-urban development paths may evolve (and to which to co-evolve to).