

## Embedding Ecological Networks and Envisioning Agricultural Practices in the Neerpede Valley

## PROBLEM STATEMENT: THE LOCAL EMBEDDING AND SITE-SPECIFIC DESIGN OF ECOLOGICAL NETWORKS

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### Keywords:

ecological networks, urban agriculture, communities of practice, landscapes of practice, hybrid designs

### ABSTRACT

The development and design of ecological networks in the Brussels Metropolitan Region is hindered by the shortcomings of top-down planning and bottom-up initiatives. On the one hand, technical planning instruments, such as the Regional Plan for Sustainable Development (RPSD) (2013) and the Regional Nature Plan (RNP) (2016) tend to reduce 'ecological' networks to autonomous 'green' frameworks, disconnected from daily practices of local communities living in the surrounding urban fabric. On the other hand, bottom-up initiatives such as urban agriculture are initiated and embedded locally, but tend to lack visioning on a regional scale and explicit design imaginaries. What is needed is an approach which combines the shortcomings and advantages of both. This paper takes the pilot projects of BoerenBruxselPaysans in the Neerpede valley as a starting point to discuss the potential of urban agriculture initiatives in the development of ecological networks. Our hypothesis is that these initiatives could actively contribute to a 'landscape of practice' on a regional scale, which is providing a way to deal with ecological networks on several levels: (1) as a way to embed the active production of landscape in local communities through work and leisure and (2) as an example of how new forms of design can accommodate and develop ecological infrastructures.

In ecological sciences, the concept 'ecological network' has been defined as 'a set of spatially linked, coherent ecosystems, interacting with the landscape matrix in which they are embedded' (Opdam, Steingröver and Rooij, 2006) In the disciplines of landscape and urban planning, this relational aspect between the network and the landscape has increasingly been used to bridge the paradox between nature conservation (fixing nature in space and time) and urban development, which is implying change (Jongman, 1995; Opdam, Steingröver and Rooij, 2006) This resonates with the urban design discourse, in which ecological infrastructures are being mobilized as structuring devices for urban development and the reconceptualization of the contemporary city (De Block, 2015).

Also in the Brussels' fringe, green open spaces are being foregrounded as a facilitators of growth and transformation, providing decompression spaces away from urban discomforts (e.g. pollution, noise, stress, ...). For example, the *Regional Plan for Sustainable Development (RPSD)* (2013) aims to spatially link fragmented open spaces to a 'green' network (Figure 1), with the ambition of developing it into a structuring device for urban development (Perspective Brussels, 2016). In line with urban development strategies formulated for the green network in the RPSD, the Regional Nature Plan (RNP) forwards the concept of 'ecological network', that more or less addresses the same open spaces as the green network, but focuses on biodiversity.

However, a number of problems still occur when trying to develop the 'green' network (of the RPSD) and the 'ecological' network (of the RNP) on the terrain.



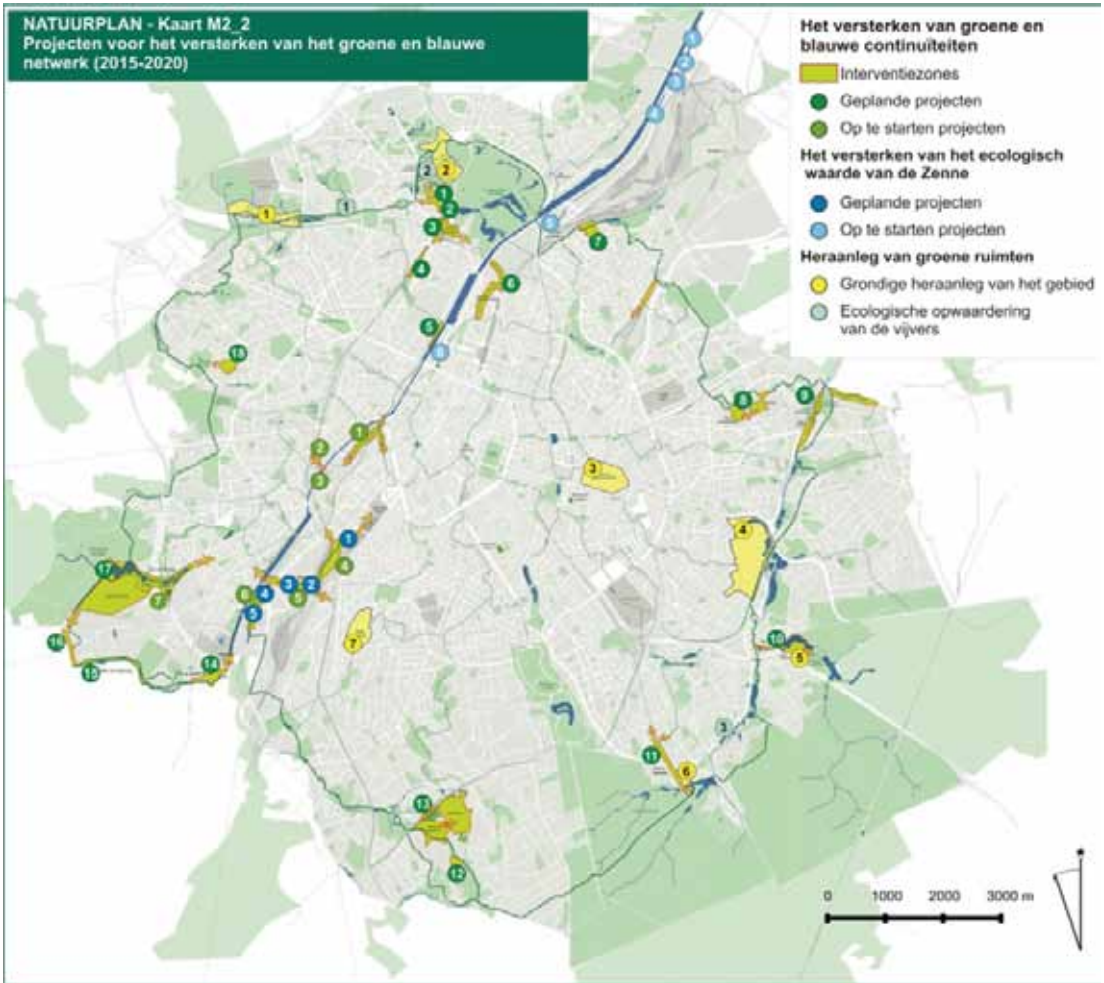


Figure 2: The Neerpede as one of the intervention zones in the Brussels' ecological network

First, there's no clear site-specific design of the networks on the local level. Conceptually and graphically, these plans make use of green surfaces, blue lines and arrows, projected on maps of the scale of the region, but they neglect dealing with contextual specificities. This ignores the impact of the conditions of the terrain since the Brussels' landscape, especially the 'landscape of valleys' at the western border, is not a vast and uniform landscape, but a patchwork of diverse built and open spaces, consisting of different biophysical systems, cut up by (rail)road infrastructures and the ring.

Second, it's unclear how these regional plans and designs for the ecological network will relate to the daily practices of the inhabitants living

in the surrounding communities. In these planning documents, citizens are considered to be passive consumers rather than active contributors of the ecological network. However, Brussels does have a strong tradition in citizen participation in the neighborhood contracts (Doucet, 2015). These contracts focus on the 'revitalization' of disadvantaged neighborhoods and are undertaken by the Brussels Metropolitan Region in conjunction with the municipalities. Yet, this multi-level governance instrument has not yet seeped through into the planning and design of ecological networks.

What is needed is a dialogue between urban design, landscape design and ecology, but also between (regional) experts and actors on a

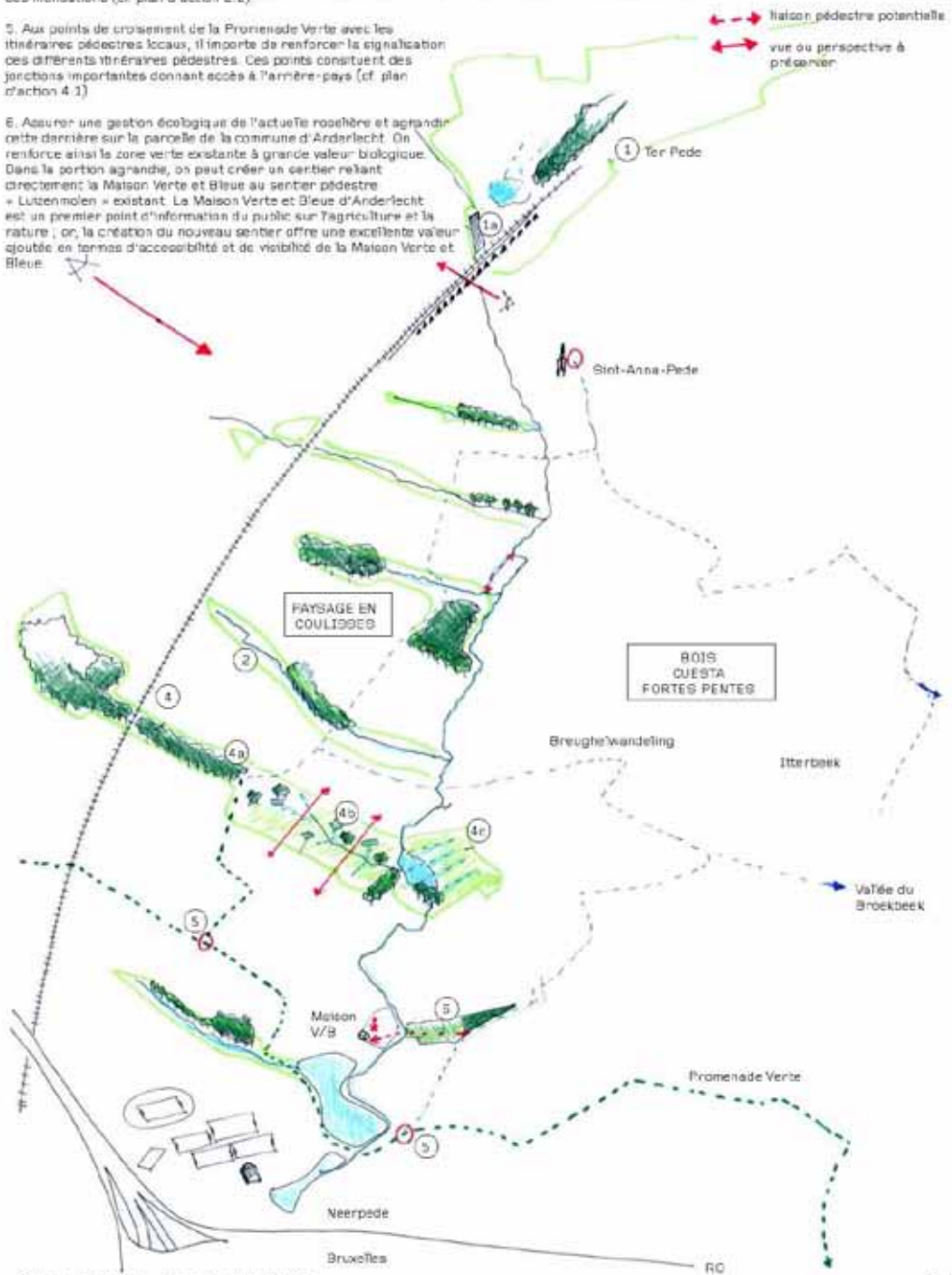


Interventions permettent de résoudre partiellement la problématique des inondations (cf. plan d'action 2.2)

5. Aux points de croisement de la Promenade Verte avec les itinéraires pédestres locaux, il importe de renforcer la signalisation des différents itinéraires pédestres. Ces points constituent des jonctions importantes donnant accès à l'arrière-pays (cf. plan d'action 4.1)

6. Assurer une gestion écologique de l'actuelle roselière et agrandir cette dernière sur la parcelle de la commune d'Anderlecht. On renforce ainsi la zone verte existante à grande valeur biologique. Dans la portion agrandie, on peut créer un sentier reliant directement la Maison Verte et Bleue au sentier pédestre « Lutizenmolen » existant. La Maison Verte et Bleue d'Anderlecht est un premier point d'information du public sur l'agriculture et la nature ; or, la création du nouveau sentier offre une excellente valeur ajoutée en termes d'accessibilité et de visibilité de la Maison Verte et Bleue.

Principes d'aménagement  
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Rapport partie 3 - plan directeur NVAP

27

Figure 3: Joint vision on the Neerpede Valley

local scale. The cross-border, cross-disciplinary and cross-administrative design exercise of *Metropolitan Landscapes* (Mabilde *et al.*, 2015) was a first exercise in this direction. In this study, the blue and green networks crossing the regional borders are envisioned as backbones for structuring urban development. In analogy to Rayner Banham's four ecologies of Los Angeles, the design team of Bas Smets and List defined four ecologies for Brussels (Bureau Bas Smets and List, 2014), for which specific design proposals were formulated by various design teams. However, also as a result of the duration, set-up and process of the design study, most of the design proposals remained on a rather abstract level.

Kristiaan Borret, the Chief Architect of the Brussels' Metropolitan Region, refers to the neighborhood contracts when discussing ways of embedding designing on the landscape scale locally. Even though existing exercises as *Metropolitan Landscapes* introduce new design paradigms derived from landscape urbanism, he claims, they lack the local embeddedness of the 'urban' projects in the neighborhood contracts program and thus lack citizens' support (De Block *et al.*, 2018). Even though there are experiments on a larger scale, the *contrats de rénovation urbaine* (CRU), there is little experience with the involvement of citizens in the construction of ecological networks.

By focusing on 'green' rather than 'relational' aspects as a point of entry, the ecological networks are envisioned as "autonomous metabolisms" (Boie, 2016; De Block *et al.*, 2018), around which other (socio-economic) substrates on which the Brussels' society is built largely disappear. In following, we will explore more practice-based and citizen-oriented planning initiatives and will claim that an 'embedded' development of ecological networks could profit from activities in

Brussels' fringe that already incorporate citizens' initiatives, and more precisely urban agriculture.

## THE REGIONAL PLANNING OF ECOLOGICAL NETWORKS IN THE NEERPEDE VALLEY

The Neerpede valley is one of the few remaining larger open areas in the Brussels' fringe. In the Neerpede, productive relationships between man and environment have historically been shaped around productive processes of farming (de Waha, 1979). Due to the proximity of the capital, the rural character of the Neerpede valley has been exposed to urban pressure through the centuries, from early industrialization processes in the 18<sup>th</sup> century, to the recreational use by the end of the 20<sup>th</sup> century (Ectors, 1982; Remmery, 1992). In the 1960s-1980s, this has resulted in a peak of protests by the 'Boerkozen', denominating the local horticulturalists (Ectors, 1982).

The Neerpede receives special attention in the regional planning documents discussing ecological networks. In the RSPD, it is highlighted as one of the main green attraction poles, next to the Royal Park and the Sonian Forest. In the RNP, it is prioritized as an 'intervention zone' (Figure 2) in the development of the ecological network. In both plans, citizens are to a large extent addressed as recreational consumers rather than active producers. Exemplary is the naming of the Neerpede as 'West Park' in the RNP, demonstrating the urban-recreational desires that are being projected on this site.

**Figure 2.** The Neerpede as one of the intervention zones in the Brussels' ecological network (Source: Regional Nature Plan)

Nonetheless, according to the Regional Zoning Plan, the Neerpede is one of the last remaining productive agricultural areas in the region, which gives it an exceptional status in the



Figure 4: Location of the Site de Chaudron among other test sites in the Neerpede Valley

ecological network. Whereas other large open spaces mainly rely on nature and forest reserves with a high biological value and less receptive to changing practices in time, the practices in the agricultural environment of the Neerpede could be evolved into active development processes in the construction of the ecological network.

However, design visions for the Neerpede valley, such as the *'Plan Directeur Interregional Neerpede-Vlezenbeek – St-Anna-Pede'* (SumResearch, Dujardin and Hydroscan, 2014), doesn't give any clues on how this exceptional status could be put into use in the development and maintenance of the green and blue networks on a daily base. Even though this design study set up a valuable interregional collaboration between Flemish and Brussels administrations, the developed proposals for the design of the blue-green network clearly limit themselves to natural

systems, without relating the ecological to a social dimension. Moreover, the neighboring environments are simply missing from the design drawings (Figure 3).

## BOERENBRUXSELPAYSANS: URBAN AGRICULTURE AND COMMUNITIES OF PRACTICE

Different from the planning initiatives of ecological and green networks in the RNP and RPSD, planning initiatives related to urban agriculture in the Neerpede are actively linking communities of practice to the construction of landscape. In the wake of a renewed interest in urban agriculture, the region has launched 'BoerenBruxselPaysans', a program offering guidance and infrastructure to starting farmers, including test sites where they can start up their farming practices (Leefmilieu Brussel, Brussel



Figure 5: Plan and section of the design proposal for the Ferme de Chaudron

Economie en Werkgelegenheid and Fremault, 2015).

One of the pilot projects in the Neerpede is the Site de Chaudron (Figure 4), for which the region envisions a 'Food Transition Hub'. In this hub, all activities related to food processing are pictured: from growing, to processing, to selling and consuming. However, the actual practices happening on site will to a large extent depend on the communities that will host it in the future. In order to find these communities of practice, Leefmilieu Brussel launched two calls: one looking for agriculture practices to farm the field (Champs de Chaudron) and one looking for communities interested in the exploitation of the farm (Ferme de Chaudron). In addition, they also launched a call for designers, for the renovation of the farm.

The winning proposal for the renovation of the Ferme de Chaudron allows to develop a clearer understanding of the types of

communities and environments that are envisioned by BoerenBrusselPaysans, and how (landscape) architecture can play a role in accommodating these communities. Curious about the design, is that it is characterized by a typological shift from a classical farm to a hybrid typology in which indoor and outdoor spaces start blending into each other (Figure 5), spatially, but also in the way in which plantations literally become interwoven with the different architectural elements. As the site is supposed to host different communities related to food and farming, the designers chose to entangle these communities' spaces and trajectories in a number of interlocking buildings, fields and open spaces, organized around a central open 'square' under a pergola. This reveals a more active and ambiguous relationship between the citizen, the farmer and the landscape.

This hybrid typology not only allows the combination of different programs on one site in an interesting





Figure 6: Collages of the winning design proposal for the Ferme de Chaudron

way, but also the unification of conceptual categories that are often seen as opposite: the natural and the manmade, the urban and the rural, the utilitarian and the pastoral, ... The Ferme du Chaudron is imagined as a site of both leisure and production, essentially shaped around an active involvement defined by work: as plants are and crops are an essential part of the design site (Figure 6), its future development and maintenance depends on the practices of the communities it hosts. On a micro-level, we see the potential of these practices for the construction of ecological systems and networks on a larger scale.

To conclude, in the pilot projects of BoerenBruxselPaysans, a potential can be found to develop ecologically sustainable practices that could link multiple scales of the ecological network. However, even though having formulated a clear design vision on the potential contribution of the communities in the design of the

Ferme de Chaudron, the different pilot projects of BoerenBruxselPaysans still remain rather disconnected patches of available land in the Neerpede Valley as a whole. In one of the design drawings (fig. 5 bottom right) the agricultural land, the Ferme de Chaudron, the adjacent green-blue network and the city are imagined as the foreplan, middle plan and background of the future landscape of the Neerpede. A question for further research is how the relationship between these different plans can be shaped spatially and socially through design schemes that cross different scales.

## DISCUSSION

In this paper, we addressed the potential of urban agriculture initiatives in the design and development of ecological networks. Urban agriculture initiatives are a booming phenomenon worldwide, moving from a fringe interest to the center of public attention



(Viljoen and Bohn, 2009; Lohrberg and Timpe, 2015). This interest results from changing attitudes towards sustainable development, such as the growing need to know how food is produced and the increasing relevance of ecological and social values (McClintock et al.; Doernberg et al.). In these initiatives, socially situated and practice-based knowledge is shared and transferred between the individuals of the communities of practice who work in the landscape on a day-to-day basis (Wenger, 1998; Omidvar and Kislov, 2014; Wenger-Trayner *et al.*, 2014).

Our hypothesis is that the implementation of ecological networks can benefit from the example of (designs for) urban agriculture landscapes. Urban agriculture initiatives are broadly understood as an expression of citizens' willingness to take the lead or at least add their voice to decisions on urban space destination and planning (Certomà and Notteboom, 2017). We are convinced that site-specific designs, embedded in the practices of a local community and characterized by an intertwining of the man-made and the natural are also at issue if we want to make the current abstraction of green and blue network of for example the RNP work in reality.

Even though urban agriculture in Brussels comes in many shapes and sizes, from historical allotment garden complexes to biological farming on a larger scale, they are all shaped by 'communities of practice' (CoP's). Crucial, we think, is the fact that in agricultural sites the relationship between communities and space is related to work, to active production of the landscape (Lefebvre, 1991; Crawford, 1999). Green and blue networks are today mostly designed by experts and managed by public agencies, and as consequence citizens are denied access, or their involvement is limited to passive recreational use instead of active practices that help shape (socio)ecological infrastructure.

However, the regional visions on the green and ecological networks still have a structuring capacity that urban agriculture initiatives now often lack.

The case of the Ferme de Chaudron illustrates how the Boeren-Bruxsel Paysans initiative aims to develop links between these new hubs and local communities and new hybrids between urban and rural communities. This way, urban agriculture initiatives generates designs in which a certain type of ecological infrastructure 'lands' on a concrete site by a hybrid solution of on the level of space, program and community.

Although the design under discussion still needs to be constructed, the images it produces for now seem to play a role in a symbolic, imaginative realm preceding the communities that still have to be built. Particularly relevant in the light of this paper, is the way in which the project will succeed to anchor the future communities of practice of the Ferme de Chaudron in the local context and in the ecological network (e.g. by organizing lunch classes around local food for neighboring schools, etc.).

However, elsewhere in the periphery of Brussels, there are already a number of existing communities built around urban agriculture, for example in historically grown allotment garden complexes. One of the future themes in our research is to investigate how this kind of hybrid landscapes, which are consciously designed in the case of the Ferme de Chaudron site, have developed in a vernacular context, spatially as well as socially. What can we learn from these existing 'communities of practice' for the design of future projects?

## ACKNOWLEDGMENTS

The authors wish to thank Cathérine Fierens and Etienne Aulotte from Leefmilieu Brussel for their clarifications on the BoerenBruxselPaysans initiative and the Regional Nature Plan during the writing phase. They also wish to thank Freek Persyn and Benoit Lanon from 51N4E for sharing the competition documents of the Ferme de Chaudron and their insightful explanation of the design proposal.

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