The malleability and unpredictability of regional transitions: a systematic approach for reflection and learning

Carolien de Lauwere, Sietze Vellema, Roel During and Noor Dessing (Eds.)

WAGENINGEN UR
For quality of life

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1 What happens in the region? A systematic approach for documenting and reflecting on regional transitions

Sietze Vellema, Carolien de Lauwere

1.1 Introduction

The ‘region’ has increasingly become an entry point for inducing a transition towards sustainable food provision, environmental quality for living and recreation, and/or economic competitiveness. Regional projects and strategies have assembled politicians, entrepreneurs, civil society organisations, and researchers in joint endeavours, with ambitious names such as Food Valley, Energy Valley, Health Valley, or Greenports. This report labels such endeavours as ‘regional transitions’. A common feature of regional transitions is that forces are bundled in a region to strengthen local economies in a context of international trade and competition. This fits in national and European policies which assume that local economies can be strengthened by technological innovation (Rutten and Boekema, 2007). Regional transitions however include more than ‘just’ a technical innovation with its necessary logistics and infrastructure. The question how connections between people (stakeholders involved) and organisations arise and grow may be much more crucial in regional transitions.

Regional transitions are often complex and their progress is hard to predict. Context-dependent factors and unforeseen circumstances may influence the course of the process and push it in another direction than intended. Moreover, unanticipated outcomes often emerge from the various interactions between different actors and dynamics at different scales. Hence, regional transitions are not easy to plan or design. This makes it relevant to make use of hands-on experiences for understanding how change and excitement occurs, how whimsical processes of transformation evolve, and how malleable these processes are.

1.2 Rationale of the project

The joint research presented in this report started from the notion that dynamics or changes themselves may be more important than the actual design or orientation of the intervention or strategy underlying the regional transition. This resonated with reflections of the involved researchers, who all participated in regional transitions as facilitator and/or project leader. They realised that they often acted intuitively, on the basis of predefined ideas of how a transition would take place, or how change is supposed to work. Yet, the realities of the regional transitions engaged them in a space of experimentation and confronted them with coincidental connections between actors and actions, the effects of which only made sense in retrospect. This challenges their desire to learn from their experiences in regional transitions. What type of regional transitions were they promoting, what can be replicated, what has been valuable in the change process, what buttons did they turn? It seems impossible to give a blueprint for regional transitions.

Another notion used in this joint research is that context matters. Talking about regional transitions suggests that the dynamics in an area can be adjusted in accordance with set goals. The case studies of regional transitions presented in this report show a specific interest in the more constant features of a region. These can be linked to processes generating social cohesion, to established forms of professional association and specialisation, or to the natural and material conditions in a region. If a researcher however looks at a regional transition exclusively from a project point of view, this may lead to premature conclusions suggesting the induced interventions are the main contributors to the observed changes and effects, while more subtle factors are overlooked. The researchers in this report

made an effort to describe the interactions between the logic and dynamics of the intervention and the region-specific conditions. Rutten and Boekema (2007) refer in this matter to tangible processes and conditions, which are related to the fact that people live and work closely together, entrepreneurs and (local) governments have a certain relation with each other and the nature of competition and business differs in different regions. Other authors present the features of such historically evolving relationships between business and governments in terms of 'regional business systems' (Whitley, 1999; Helmsing *et al.*, 2011). The interest in the time- and place-specific conditions of the regional transitions made the researchers sensitive to looking at what happens outside the span of control of the intervention. For example, the case studies look at potential alienation of certain actors, and acknowledge that change or innovation is often observed only afterwards and results from coincidental articulations with embedded practices.

These interests in (i) the sequence of events visible in the process of regional transition, and (ii) the interaction of induced interventions and the specific regional conditions and practices formed the starting point for the individual case studies. Composing empirically rich case studies was the starting point for reflection and learning in the five regional transitions which are central in this report. Emphasis is on institutional innovations: new ways of cooperation between (local) governments, (agricultural) entrepreneurs, and knowledge institutes which are initiated to reach a desired future. These kinds of innovations ask for activities to facilitate cooperation, consideration of strategic plans, the finding of congruence in new practices and interactions and the building of alliances between (agricultural) entrepreneurs and (local) governments and other relevant actors. Typically, these processes almost never pass as expected beforehand. This makes it hard to learn from the experiences obtained during these processes. This chapter however hands a methodology to overcome these difficulties and enables researchers to learn at least a bit from these hard-to-get processes; in general and in a regional context.

1.3 Understanding regional transitions - a three-step methodology

The five case studies used a similar systematic, which builds on the realist approach to evaluation (Pawson and Tilley, 1997). This approach does not aim to detect best practices by asking 'what works?', but looks for answers to the question 'what works for whom under which circumstances?'. Tracing processes was the most important way of generating empirical evidence, which builds on the methodological discussions about case studies (Bennet, A. and Elman, 2006; Fontana *et al.*, 2008; Ragin and Sonnet, 2004; Gibbert and Ruigrok, 2010). Identifying sequences of events on the basis of documents, minutes, interviews or own observations was used to document how interventions with the label 'regional transitions' articulated with the spatial, material, historical, and institutional realities.

The case studies operationalise this approach in three steps. First, the drama was reconstructed: who entered the stage at what moment and how did this affect the interaction between the stakeholders involved and the changes they intend to realise? Second, the social and institutional boundaries within the region were identified as well as interactions between relatively independent practices and organisational units in which the involved stakeholders participated. Finally, the case studies detected plausible causal processes that could generate the observed changes as well as reproduce the existing traits of the regions. In the underlying sections this is explained in more detail.

Step 1 - Reconstructing the drama taking place in the region
The events which took place and the choices made during the regional transition processes were described to reconstruct the drama. This is the so-called 'dramaturgic analysis', building on the work by Goffman (Schnabel, 1978). Proponents of this type of analysis (Hajer and Poorter, 2005) define regional transitions as a political process in which the participating stakeholders reach a shared vision through interactions. They use the dramaturgic approach as framework in which the transition process is summarised in a script of consecutive steps and events which lead to the plot of the story, the emotional momentum in which a breakthrough is reached. The exact story about the events in the

transition process can be discovered by asking questions about what happened when, who entered the stage at what moment, and what was his or her role in the further course of the process. Composing a timeline is a useful tool for that, which presents a detailed description of the change process. Describing the sequence of events and choices clarifies in what ways an induced intervention enables or constrains regional cooperation and how the final outcomes of the process are also determined by interactions between regional stakeholders and regional circumstances.

An attractive image to visualise the drama taking place in a regional transition is that of a canoeist in wild water. He can plan his journey beforehand and think about the choices he will make during his trip. However, in reality he has to respond quickly to unexpected curves and salient rocks (Tiemeijer, 2011). This illustrates that choices are never made independently of their surroundings. They always are affected by the interactions with opinions, means, expectations, and behaviour of individuals and/or groups and by their societal context of rules, routines, and institutions.

Step 2 - Identifying social and boundaries and independent institutional logics in the region
A dramaturgical analysis of a regional transition process shows that change mainly is the work of people. On the other hand, local policy refers to regional transitions as a matter of vision and strategy. The plan falls within the boundaries of a certain domain or organisational field and a plan is developed that fits the capacities, preferences, and qualities in this domain. However, all kinds of other networks and groups are involved in or affected by the transition process. These networks and groups also have their own dynamics and logic. According to the theory of Luhmann, communications of actors form 'social systems', in which people (unconsciously) develop an 'own' language which never can be completely understood by other social systems (or groups of actors) (Assche *et al.*, 2011). Regional transition processes thus are the result of discursive interactions of groups of actors that are reasoning on the basis of the social system of systems they participate in. This makes regional innovation processes hard to plan because their progress is affected by the - mostly unpredictable - dynamics which may arise during the interactions between the groups of actors involved in the process. The logics and communications within, for example, the municipality council and the office of the mayor can be distinct from the communications and logics within a group of family enterprises associated around a specialised industry, or within a group of concerned citizens.

These distinct and independent social systems arise from the context in which a project or intervention leads to a regional transition (or not). Therefore, impact and change are not only the result of a project or intervention but rather a result of the interaction between the intervention and the ongoing discursive processes in the region. Analysis of the spatial or official boundaries of a region to understand a regional transition process therefore is not enough to fully understand what is going on in a region. The case studies try to identify what kind of bounded social systems were operating within the sphere of the regional system, but also which were outside of the sphere of influence of the induced regional transition. As a next step, the case studies try to describe the logics and communications within these bounded systems, without assuming that the desire to bring these together under the umbrella of a regional transition would generate a shared logic. In addition, the case studies also explore whether the small group responsible for the regional transitions forms a closed and bounded social system, with its own communications and logics.

Step 3 - Detecting plausible generative processes underlying the changes
Regional transitions usually set out to realise public or common goals. The case studies look at the processes or mechanisms (Gerring, 2007) generating the intended and unintended effects, not so much from the perspective of whether the intervention works as it supposed to work. The case studies try to detect plausible processes explaining the observed changes. It may be that the intervention played a central role in the changes. However, most likely the interventions configure with other ongoing or triggered processes in an unanticipated combined process generating change (Blatter and Blume, 2008). Or, the resistance to or friction with the induced interventions generated a process of change. Keeping an open eye for alternative explanations has been one of the endeavours made in the case studies, especially when it becomes clear that the results of a regional transition process depend more on the commotion it causes than on the technical design of the intervention. The case studies serve the purpose to discuss what the documented regional transition processes are actually a case of

(Gerring, 2004) and examine whether these insights give more clarity on the programme theory arising from the incremental and evolving change processes (Vellema *et al.*, 2013).

Consequently, the case studies try to compose a programme theory or intervention logic on the basis of observed processes and interactions, and less on the basis of the intended performance. Commotion leads to new change processes or results, for example because a local government offers room for manoeuvre. This means that the outcome of a change process also depends on the choices made by the people involved in the process and is therefore hard to predict. It means also that an intervention - for example to speed up the regional transition process or get it started again - may make sense only if it affects the choices made by the actors involved. This can be examined on the basis of four questions proposed in the realist approach presented by Gill Westhorp (CDI, 2011):

- Whose choices does the intervention want to change?
- What kind of other choices does the intervention want the actors to make?
- How does the intervention expect to cause those different choices?
- What resource(s) does the intervention provide to enable / facilitate / support that change?

By asking these questions, researchers involved in the case studies of regional transitions were encouraged to reflect on what actually happened and to describe with more precision the kind of processes set in motion by what kind of action. Asking the question what works for whom already required the researchers to think about specific groups of actors and relationships within the region; the use of a generic label of regional transition may hide the context in which such a process takes place.

1.4 In sum

This chapter introduces the methodological discussion underlying the case studies presented in this report. The aim of this methodological discussion was to support the researchers engaged with regional transitions as facilitator and/or project leader to look from a distance with an open and critical mind to the process which he or she has also designed. This was motivated by the observation that the use of strategic concepts and abstract rhetoric to promote the regional transition process may take away the view on what really happens and on how actors (inter)act within the process. Realities have to be reduced to create development paths and social coherence. This also includes the risk that the attention is especially directed towards the key players in the process and that players who are as important but who operate more on the background are overlooked.

In the next five chapters, the three-step methodology is applied by engaged researchers in ‘their’ regional transition processes. This was not always easy. Yet, the approach contributed to reflection and learning about how ‘designed’ interventions work (or not) under specific regional circumstances and how they affect the actors in a region. In the final chapter, Roel During reflects on this endeavour.

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2 The logics of innovation and transition in the Venlo region

Roel During, Leonie Heutinck

2.1 Transitioning Venlo

The Venlo region lies in the northern part of the Province of Zuid-Limburg. The regional economy is primarily based on industry, agriculture and logistics. Agricultural activities are horticulture, glasshouse cultivation, and mushroom growing (50% of the total Dutch production). The Venlo region focuses on primary production, whereas the adjacent region near Helmond/Veghel (in the Province of Noord-Brabant) specialises in food processing. The region sees itself as a logistic turntable between Rotterdam, Antwerp and the German Ruhr and Rhein areas in the east. Not only the logistics of the component industry is organised here but also of foods that are produced within the region. Both these main components of the regional economy are developing fast and are in need of spatial enlargements of their territories. The combination of agricultural and logistic activities has been acknowledged by the government when the region became a so-called 'Greenport', a spatial planning concept of the Fourth National Policy Document on Spatial Planning.

The idea of a Greenport rests upon an analogy with a Mainport: it is portrayed as a cluster of horticulture and glasshouse culture entrepreneurs, retailers and suppliers. Because of a tight clustering and a vicinity of knowledge institutes, an intensive knowhow exchange is expected to occur that enables more cooperation, leading to better innovation. This new status of a Greenport empowered the region in its agricultural as well as logistic transition. Regions as self-steering units became apparent as a logical consequence of European regional policy implementation. This implementation was guided by the Dutch regional policy 'Pieken in de Delta'. New opportunities emerged for funding regional economic development in EU programmes such as INTERREG. The region defined its strategy and strengthened its identity by interacting with its policy environment. Regional identities ground specific planning cultures, and within planning cultures specific logical reasoning can evolve (During, Dam and Zande 2009). In this case a significant role for knowledge brokers and process managers can be observed organising consensus in changing patterns of public private partnerships.

The spatial and economic planning of the region can be described as a transition in which numerous networks have been created, yielding new cooperative and innovative endeavours of regional actors. This process has been researched in 2010 and 2011 by studying the documents (including E-documents) that were produced in the regional transition, by conducting interviews with knowledge brokers and opinion leaders in the region and by reviewing the newspapers (using lexisnexis). The aim of the analysis was to unveil the particular logics on which the ambitions of regional innovation and regional transition are based. The information that has been used here adds to what might be called a grand-design approach of the regional transition. In practice, beyond the scope of this analysis, there are numerous projects carried out by small entrepreneurs that add to an overall picture of a transitioning region. Several documents describe the regional transition history (Dammers *et al.*, 2004, Kranendonk *et al.*, 2009, Van Mansfeld *et al.*, 2003, Vogelezang *et al.*, 2013). A full account is given by Heutinck (2010).

First we will describe and discuss the course of events and how these were perceived by different actors, indicating logical differences in social reality constructions. These social constructions of reality influence the interplay of all actors and this will be explored in the so-called dramaturgical analysis. Subsequently we will discuss the actions of several actors and their underlying strategies, providing more understanding of the particular logics in use. Here we will focus on the strategic choice of institutionalising versus extending and intensifying network actions. Finally, we will analyse the rationale of inclusion or exclusion of areas, partners, themes etcetera (the region as a social system).

These three steps in the analysis allow us to reflect and conclude on the logic of interpreting the process of regional transition by different actors, on the logics of deploying different strategies and the logics of inclusion and exclusion.

2.2 The course of events in a dynamics regional transition arena

It is impossible to give a full account of the events that launched the regional transition process. There is no beginning of such a process. Nevertheless it is important to raise the question what events have contributed to the activation of the region. Here we see events as uncontrolled and vigorous inflictions on daily life in the region, sometimes happening in a short time span, but also those that are more transitional. Actions are the deliberate interventions of actors in the regional transition arena. Some events have been really influential, others may seem rather marginal or may even have been erased from the collective memory of the region. We will focus on the events that have been mentioned in interviews and reports, because these seem to have been important drivers of action.

A very important event has been the Schengen Agreement (1992) and the establishment of the Euregions. This gave the regions along the borderlines a big boost whereas the relevance of the national borders diminished. A very dramatic event was the outbreak of swine fever in 1997. This invoked many actions on national, provincial, regional and primarily on local level. On national level the Venlo region was acknowledged as a pilot area to reconstruct the spatial and economic configuration of pig breeding and the sustainable use of rural areas. In a later phase the results of piloting were put in the consistent framework of the Reconstruction Plan. A result of the piloting phase was to pay more attention to the international position of the region, because of increasing worldwide competition. This resulted in acquiring the status of Greenport in the national regional policy (2005). In addition, the Floriade was organised in Venlo in 2012, providing the unique possibility to present the Greenport to the world.

These are the success stories that shaped the region after the disastrous pig disease and we will encounter many of them later in this chapter. But there have also been drawbacks. The southern route of the Betuwe railway line for container transport between Rotterdam and Germany was abolished by the minister of transport. It was supposed to run through Venlo and to address the needs of the Rhein area to the east. And there has been a fusion initiative which intended to merge the flower auction industry with the flower auction industry in Aalsmeer and with others abroad. This initiative failed because of, as mentioned before, a lack of support from the national government.

In 2000 a decision was made by Wageningen University to build the new experimental lab of Applied Plant Research Institute (PPO) not in Venlo but in the western part of the country (i.c. BLEIswijk). This was considered a big loss for the region, because a strong connection to a university was seen as a strategic asset for becoming more innovative.

These are just a few of many examples and the region had a dramatic sense of lagging behind in national policies. This was reflected in the parliamentary elections: the PVV (the party that was founded by Geert Wilders, who grew up in Venlo) received an incredible amount of votes that reflected the unrest and anger of the inhabitants.

This combination of failures, drawbacks and success stories made the region eager to move forward. It became obvious for the actors that the region should open up to the rest of the world and become innovative, fit to compete with other regions in the world market. In the dramaturgical analysis we will highlight in particular the role of its regional identity.

2.3 The course of events as observed by regional transition partners

Stakeholders in the region consider it of great importance to write a history of the transition in which all partners, partnerships, products, important persons are put in a consistent framework. It provides a convincing story that significant progress has been made. And, not surprisingly, they pay a lot of attention to the interventions they have been involved in. This socially constructed view on the recent history is very important when it comes to interpreting the actual situation and the taxations of the necessary steps to make progress.

Different views emerge when discussing the beginning of and the most important achievements in the process. We will review these two aspects of the process subsequently.

An alderman from Venlo refers to the Schengen Agreement that resulted in national frontiers becoming obsolete in 1992, forcing Venlo to reconsider its economic and spatial strategies. For him the regional transition started with this political change. In an overview of the process by Knowhouse, the history of events starts with the policy documents the region was facing, necessitating a discussion on forecasting its strategic position. Knowhouse mentions the Provincial Environmental Plan aiming at integration of all territorial policies and claims in the region, the Reconstruction Plan providing the framework for renewal of the farming industry and the spatial configuration of housing and farming in order to comply with European regulations. According to the knowledge brokers from Alterra, the course of events anticipating the Greenport concept started with the so-called Regional Dialogue (Regiodialoog), that started in 2001 (Kranendonk, personal communication). It was stated that the nature of the public private partnership changed frequently and rapidly during the eight years that followed this Regional Dialogue. The Dialogue was organised by Alterra in the first phase of piloting after the pig disease. A different light on the history of events is shed by a member of the Plant Science Group, working in 2001 for the Applied Plant Research (PPO) Institute of Wageningen UR. Governor Driessen visited PPO in 2001 and asked what it could do for the region after having decided to build its new laboratory in BLEIswijk in the western part of the Netherlands. This invitation led to the project Agro-Eco Park Horst and the Knowledge Centre South, which was renamed Knowhouse later on. While the Regional Dialogue was abstract and visionary and its results taken up by politicians and strategic planners, the Agro-Eco Part Horst and the related Knowledge Centre were more connected to agricultural entrepreneurs. It seems that these have been parallel processes.

In this short account we see four different actors exposing four different views on the history of the Greenport success. Below we will highlight some differences in what are perceived as turning points or very important interventions in the process.

The Knowledge brokers basically present a dialectic picture of the course of events in which exterior events alternate with self-organised events (Kranendonk, personal communication). These internal self-organised events are given elegant names, such as Deurne Session (1, 2, and 3) or Groenewoud Overleg (a dialogue named after the place it was organised in). It can be seen as a way to organise the social memory of the regional innovation process. Also collaborative products are put as markers of history in the course of interventions, such as Agenda for Speeding up (Versnellingsagenda), Intention Agreement Four Leaved Clover and Sideway Masterminds. Most detail is given to a great diversity of collaborative structures (in an overview of events by Knowhouse more than 35 are mentioned) that are subsequently indicated as experiments in collaboration, highlighting initiatives, making choices and deploying the regional vision. This sums up a very complex image of the process given below.

In a second account on the process of knowledge management in Greenport Venlo, Knowhouse focused primarily on the interior processes (Arnold 2011). In this informal document Knowhouse referred a few times to the outside world, when picturing Venlo as a unique Greenport between four others because of its emphasis on knowledge. The problems in the Venlo region are related to similar problems in the Randstad and the Ruhr areas in Germany: congestion and shortage of space. When discussing the urgent need for regional profiling, a comparison is made with Eindhoven Brainport. This

Brainport label has proven to be really advantageous for the city of Eindhoven, and for this, according to Knowhouse, it provides a good example of how to profile a region. The exterior events all have to do with policy documents providing opportunities to grasp or good examples that may inspire the region. So there is the execution of the Reconstruction law, the policy document describing the Greenport policy of the Government, the decision to give Venlo the courtesy to organise the annual Floriade event, the decision of the central government to give Venlo the status of experimental zone for Cradle to Cradle projects, and the Coalition Agreement of the Province. By referring to the outside world the identity of the Venlo region is emphasised.

2.4 Dramaturgic analysis

Until now the course of events has been accounted for in rather neutral terms. But in practice there is much more to it. Some believe that Venlo should play a big role in innovating the Agro-food cluster. Others are worried or extremely annoyed by the spatial development the region seems to be wrapped in. Industrial visions collide with pastoral visions on living in the region of Venlo. City plans sometimes override the visions of those who work in the agricultural sector. In this dramaturgic analysis we portray the course of events as a theatre play, in which emotions and motivations are more important than knowledge and strategy for clarification of the next step in the process. On the contrary, the next step is understood as a reaction to the previous one, so creating path dependency in the course of events. This part of our analysis is mostly based on the interviews, the emotions that were vocalised, such as the indications of trust, proud and disappointment. This analysis sets the first boundaries of the particular logics sprouting from social constructions of reality.

The success stories highlight the acquisition of the formal Greenport status of the region and, in addition, the acquisition of the Floriade event. The Floriade is compared with the annual world exhibition: a highly symbolical annual event to show the world how society is moving forward using technology and design. The ideas behind the new mixed farm received less recognition in the region, but are not framed as a failure however. Behind the success stories are other more dramatic stories of the Rabobank withdrawing from the villages and Wageningen University ceasing its activities in the regional production research centre. For some of the actors this was the real drama that invoked a reaction from the regional actors who were concerned about a possible economic setback. And moreover, behind the stage of institutions, are stories of disappointment, of not being attached to or not benefiting from the successes, vocalised by individual entrepreneurs.

Both the interviews and the self-descriptions have strong personal components. The founder of the process, Jan Heurkens (1945-2001), who was director of the Rabobank, has acquired a mythical status in the project, just like the provincial governor Ger Driessen. Also Peter Smeets from Wageningen University is often mentioned as the great innovator of the agricultural system, promoting ideas of scaling up and improved control in pig breeding. The biggest success was claimed for Jan Verheijen, who started as the secretary of the Regional Dialogue and became alderman. This was interpreted as the ultimate confirmation that the project was well on the track to profile the region and to synchronise the agendas of the city of Venlo and the agricultural activities in the rural area. The Alderman of a small village (Horst aan de Maas), Leon Frissen, acquired a heroic status because of his relentless lobbying for the Floriade. A deeper analysis beyond the scope of this one would reveal a regional network of opinion leaders setting the agendas and providing the landmarks for the regional actors in the network. In this, knowledge institutions can only create a fertile environment in which the innovative behaviour of these entrepreneurs is stimulated (Ger Driessen, personal communication).

These so-called ‘forerunners’ (Arnold, 2011) of regional innovation and entrepreneurship are embedded in a wider cast of regional identity under construction.

As director Strategic Projects Rabo Bank, Jan Heurkens tied the municipalities Horst, Grubbenvorst and Sevenum together around the idea of a foundation for a Dynamic Countryside, and involved the local Agricultural Foundations (LLTB Horst and LLTB Sevenum). They started promoting regional restaurants and kitchening and started a local culinary heritage foundation. Besides, he started many

initiatives to enhance cooperative entrepreneurial structures, such as the Glasshouse Project California, Knowhouse among others. He addressed the identity issues of the region, in which cooperation structures were lacking because of historical reasons, such as a strong influence of the church on village level, a traditional life style in the villages and a strong focus of local politics and investors on developing small family businesses (Heutinck 2010). Many of his ideas are still present in the actual transition process.

With his track record in working at the board of directors of the big multinational Océ in Venlo, Jan Vercoulen was well equipped to analyse the needs and the political situation in Venlo. He came up with the idea of an innovation centre to create a space were entrepreneurs from different sectors could meet and were scientist could share their knowledge. In hindsight he was attributed the political breakthrough that was based on an extraordinary critical analysis of the region (Heesen, 2011).

Coming from outside the region, the scientist Peter Smeets from Alterra said he had observed a change in regional identity that was caused by the regional process. He compares their identity with the regional identity of South Limburg (his own roots) when stating that there are significant differences and that culture is very important in the way a region adopts new ideas. He sees the Venlo region as a melting pot of different cultures that were imported a hundred years ago, when the region changed from almost uninhabited to one in which agriculture became the daily business. He clarifies that at first the region had a very low self-esteem, 'false modesty' in his eyes, caused by a low level of education. This self-esteem improved due to qualifications given by external actors in the regional innovation process, to visitors who wanted to learn about the greenport ideas, and finally due to study visits to and the exchange of ideas with Shanghai. This example (taken from Streamlining Venlo) shows how the regional setting of actors created projects and initiatives to observe the outside world and use the information to reconstruct the regional identity. It is this regional identity that functions as the core of the region and its innovation processes. The Province and several municipalities issued a very thorough book on the historic roots or the regional identities (Bruin 2010). In addition to the cultural boundaries (to be discussed in Section 1.6), identity constructions are made to make the distinction between the traditional region and the modern one.

This reconstruction of the regional identity is done by creating several communities, such as the Agrofood Community that was initiated by the Provincial administration, the Agricultural Knowledge Centre South (the predecessor of Knowhouse), and a Platform Agrologistics. In these communities the language is entrepreneurial and the knowledge is claimed to be hands-on and practical. Meetings are organised to confirm the need for progress, innovation, good entrepreneurship etcetera. The results of these meetings are framed as innovative, creative and action oriented (Arnold, 2011). It all comes to organising the breakthroughs that were needed for system innovations. The combination of interior processes and references to the outside world gives rise to the so-called 'Geenporter' identity, applicable to those who adhere to the ideas of Greenport Venlo and participate in the communities and their meetings. Politicians at provincial level gave the lead to entrepreneurs and attempted in this way to provide more action and less talking.

The story of regional innovation and its forerunners takes place against a background of increasing criticism and diminishing trust in the agricultural sector in society. Reading the history of events in the documents produced by Streamlining Venlo and by Knowhouse etc., all seems well under control and things work out nicely. But the problems in cattle breeding and glasshouse culture that were very distressing for society caused a deep concern among the citizens of the region. The malicious pig disease in 1997 and several European and national directives and laws forced the agrarians to reflect on the economic and spatial structures of their sector. In search of the best way to make a next intensification step in cattle breeding, the regional innovation structure got involved in huge moral issues about sustainable production conditions and landscape quality (Duineveld, 2012). This was aggravated by revolutionary ideas produced during a national agricultural innovation programme Transforum, in which the best way to keep pigs was supposed to be in fully controlled huge blocks of flats (Smeets, Varkensflat). Transforum was in search of a good location to implement their ideas and the village of Nederweert seemed perfect because it is situated in a so-called agrarian developmental intensification area and because of its designation as a pilot project for controlling the outburst of new pig diseases. Despite the idea having been renamed AgroPark - Who can be against a park? - and

later Newly Mixed Farm - mixed farms have positive connotations, because they represent the traditional family-oriented way of farming - people quickly made the link with the pig-flat buildings and started to resist and lobby against it. On the whole it became a major local issue and local politicians finally voted against it. A new proposition was developed for Horst aan de Maas, in the so-called agrarian intensification area (LOG). A resistance group in Grubbenvorst (Vereniging Behoud de Parel) fiercely opposes this plan. This event influenced the Greenport process in a way that prudency was considered of great importance.

Behind this Agropark discourse, there were others that were also focused on growth and innovation. For example the concept of a growth-motor emerged in a provincial programme on innovation. Specific forerunner businesses are supposed to trigger regional innovation for other companies. They are to be selected and fostered by the LIOF (Industrial Bank) and NV Regio Venlo (Arnold, 2011), which were founded in 2005 by four municipalities.

This dramaturgic analysis shows how a group of forerunners claimed to have moved the region forward, to an innovative Greenport. On the local TV this image is confirmed by the so-called *forerunners programme*. But this raises the question of those who are supposed to carry out the strategies and pathways of innovation. Are they lagging behind? Are they included in the process? The few entrepreneurs that were interviewed clearly have been disappointed by the big expectations from the communities:

> 'There have been informational meetings in the evening in which politicians gave an account of what's happening: big names and beautiful words; but I am a person of action and when I see such a booklet on Greenport Venlo I think it's full of soundbites but not for man in the street. Big entrepreneurs take the advantage; they do speak another language.'

This interviewee saw 66 organisations all focusing on the same issue, regional innovation. He clarifies by saying he appreciates scientific results from Wageningen UR, but immediately adds that scientific analyses often contradict his intuitive plan of action. He is disappointed because of the political scene. His plans for developing his firm collide with governmental rules and the whole process of regional innovation did not change a single thing. Even worse, he observed a loss of agricultural potential because of the compensation measures for logistic expansion, involving the alteration of agricultural land into nature reserves. Five hectares of agricultural area for one hectare of logistic expansion, that is the deal these politicians make. He interprets these developments as deadlocks in development in certain areas. Another entrepreneur active in the flower bulb production and marketing said his sector is under pressure. He has good hopes that Greenport may serve as a catalyst for the better. At first everybody is involved in producing a big paper tiger, but afterwards new possibilities emerge. In his eyes one of the major problems is the structure of the agricultural sector: many family firms, small businesses. So he sees a need for integration to include them. The interest organisations are lobbying on behalf of them, but they and the governmental actors should be more positive and more open towards cooperation with the small players in the field. This can be substantiated by mentioning a small-scale initiative for pig breeding in glasshouses by Wouter Verkerke, which was acknowledged as a good innovative initiative by the small entrepreneurs (personal communication José Vogelezang).

During the play the region established a firm self-image and strengthened its identity. Initially this took place in response to certain threats, such as the closure of local offices of the RABO bank, and the withdrawal of the Wageningen University activities in the region. After a great number of events a specific innovation-oriented identity brand emerged that was seen as newly established in the region. In this identity brand entrepreneurs, innovations and upscaling the agricultural profile of the region became key issues. This however did not address the feelings of concern in society about the industrialisation of the food industry and the moral issues about sustainable ways of animal breeding. These kinds of controversies resulted in a very complex discursive environment for the regional transition partners. Moving forward and promoting the Greenport identity of the region should be organised in a prudent manner. The straightforward concepts of economic profiling and growth were accompanied by others that address issues of sustainable growth. One of the academic knowledge brokers considered the problem to be about *the licence to produce*.

The need for prudency was widely acknowledged and as a result we can see how a multitude of nice concepts indicating innovations or system innovations have been used in the political discourse. Basically the idea was to combine Cradle to Cradle and other sustainability concepts with businesses and acquire a new licence to produce: a shift that can be seen as a quest for a balanced combination of ideology and profit. Here are some of the concepts that have been used:

- City and countryside dialogue about the future of North Limburg
- Science and farmer's wisdom
- Cradle to Cradle
- Quality of Life
- Four Leaved Clover
- Innovation Centre for Healthy Food
- People Planet and Prosperity
- Innovation-ecosystem (Vercoulen Verbindt)
- Knowledge Skills and Cash

This dramaturgical analysis shows the controversy behind innovation and inclusiveness. Should the forerunners be given full support and should the lagging behind of small actors be accepted as collateral damage? Or should the region as a whole move forward and include all actors included, which means that the conservative foundations are slowing down the process. This hybridity is inherent to the social constructions of reality in the discourses of forerunners, knowledge brokers, and politicians and infused the logics of actions by these actors in the transition arena, as will be outlined the next section.

2.5 The logic of strategy and intervention

Building on the results of the dramaturgic surgery we can proceed our analysis on the particular logics, connecting actions and its presupposed effects. We will keep an open eye for the hybridity discussed above which comes from the discursive interaction of forerunners, knowledge brokers, local politicians and resistance groups.

This analysis is based on causal process tracing. For a theoretical account we refer to Chapter 1 of this book, but in short, causal process theory departs from questions like:

- What kind of management buttons are there to operate?
- What kind of language is being used?
- How is the intervention logics embedded in the regional ideas of reality?
- How can you unveil hidden causal relations?

In the following, it will be shown how actors perceived innovations and system innovations and what they actually did to invoke or organise them. At first we will try to find out why so much attention is paid to knowledge and more specific to the gap between practical skills and scientific knowledge.

2.5.1 Innovation as a transdisciplinary ambition

In 2001 the Province organised a symposium with the title Science and Farmers Wisdom, with the ambition to connect both ends. Consensus was achieved on the road to innovation: it takes the involvement of agribusinesses, local government, scientists and interest organisations to innovate. In the Regional Dialogue the knowledge brokers adopted this view and urged for an integrated approach to solve the problems of the region. In doing this they put themselves on the stage, because they are capable of working interdisciplinarily. An academic recollected an attempt by a farmers collective to find innovative solutions to their problems caused by diseases and tightening regulations: he judged that they failed because of a lack of integrated thinking and accused them of running around in circles without involving non-famers. Interdisciplinary work is seen as a precondition for integrative solutions. This interdisciplinary approach was the key issue of the Regional Dialogue. The Province was willing to support the Regional Dialogue under the condition that no abstract vision was to be produced, but more practical knowledge and concrete initiatives. So the follow-up of the Regional Dialogue concentrated on ten very concrete and practical solutions as an outcome. Due to the obligation of a

concrete outcome the idea of an integrated approach changed during the process. Increasingly, the academia became convinced that a genuine involvement of practitioners was important. And this is why they introduced the concept of transdisciplinary knowledge: the specific knowhow that results from the interaction between scientists and practitioners.

2.5.2 A network approach in search of niches

If we analyse the situation and the words of the scientist, we can see how innovations are considered to be organised at the fringe of well-established structures, trespassing the hindrances of these structures. This is achieved by networking and organising creative transdisciplinary ateliers. At first the scientist spoke of interdisciplinary research, implying that innovations would emerge as a result of different scientific disciplines working together. In this line of thinking it is necessary to organise a multidisciplinary research team, and in his case he combined design, policy analysis, process management, agricultural knowledge, landscape ecology and geosciences that worked on the implementation of the Reconstruction Law for industrial agriculture. Although the structures between disciplines were trespassed, no innovations emerged that were acknowledged within the region. The concept of transdisciplinary research is based on another basic distinction of structures, between system, knowledge and practice. Innovations became system-innovations as the regulatory structures had to be changed. Increasingly the concept of the system in system-innovation became synonymous with environment, concerning policy regulation and societal acceptation. At first it was deemed necessary to invite four distinctive institutions to realise this transdisciplinary approach: entrepreneurs, policy officers, NGOs and scientists. In this way the interaction between structures could be organised by inviting representatives and do creative sessions that in the end led them into a big yield of good ideas posted with yellow stickers on the wall. This did not pay off in the way they expected. Despite the many good ideas, the major breakthroughs for innovation did not emerge and many ideas were dismissed outside the context where they were produced. So the focus shifted to learning in a so-called community of practice (CoP): the exchange of practical and theoretical knowledge in a network as a precondition to learn to anticipate a changing environment in an innovative way. Moreover they introduced the concept of the five Os, standing for the integration of government, research, entrepreneurs, education and environment. This concept was put in the core of a so-called Learning Region in which Communities of Practice were installed to organise the exchange of scientific and practical knowledge and to move forward. Kranendonk *et al.* (2009, page 18) explain that participants work on complex issues and simultaneously profile their identity. In the process of streamlining Venlo, knowledge brokers worked on the ideal picture of a Mode 2 society, analogous to Mode II science (page 22). It is perceived as a network society based on cooperation between the five Os. Here again we can see the notion of innovations emerging at the crossroads and as the result of interactions of important societal structures and institutions. The implicit choice to frame innovations as a systemic change of structures inevitably caused actors to see and treat each other as representatives of these structures, cooperating in a network and meeting and co-creating innovative ideas in ateliers. Individual entrepreneurs were not seen as representatives of their sector, because the sector was considered to be very unorganised. After the Regional Dialogue, the knowledge brokers established the so-called AgroFoodCommunity, striving to connect scientific and practical knowledge. They incorporated this community idea in a wider network strategy of scaling up the ambitions and relationships of the region.

2.5.3 An institutional approach to enhance the innovative performance of the region

A competing notion of innovation can be observed in the innovation programme SAIL, that has been issued by the province. In SAIL three interconnected levels of change have been distinguished:

- Improvement (applying knowledge to continue and improve an activity)
- Renewal (developing knowledge to design new services or enter new markets)
- Transformation (a process of 5 to 20 years leading to societal change)

This categorisation of change was proposed by professor Termeer in her inaugural speech (Termeer 2006). We can recognise these three levels in SAIL in the sequence of the Greenport improving its performance in an international setting (the highest level); the forerunners of the entrepreneurs who

are successful in developing new markets (the intermediate level of change) and the traditional entrepreneurs who are improving their businesses step by step and who should be taken up in the regional process of scaling up and internationalisation. By means of vouchers the transfer from the lowest to the middle level is organised for small-scale entrepreneurs. These levels are perceived as an important internal structures in the entrepreneur community that relate to the outside international market. New structures, created within the interior complex framework of regional actors and facilitating new collaborative structures, were seen as an innovations. So we see a structural view on innovating and as a result many new institutions were formed in the process. We can find numerous examples of this. In 2005 a new organisation was established, called Knowhouse, as has been mentioned before. In a description of the process, Knowhouse designated some 35 new institutions that were established en route, but probably there have been many more. This tendency towards institutionalisation and localised profiling has been interpreted as the logical consequence of a lack of trust: each municipality strived for its own small institute, preferably located in a special building (personal comments by José Vogelezang). This was considered to be related to the blurry organisational setting (Kersten, personal communication). Also it reflects the emphasis on collaborative structures that the region did not have until recently and were deemed necessary for its innovation strategy. It marks the prudency that is inherent in the political process as it can be seen as an incremental pathway to an innovative region with rather small steps.

2.5.4 The logics of upscaling

The strategy of scaling up has been mutually confirmed between different political actors of the central, provincial and municipal governments (Anonymous 2009). The idea of a Greenport is rooted in the so-called Lisbon Agenda of the EU, taken up in the national policy documents on spatial planning (*Nota Ruimte*, 2004) and on regional innovation (Pieken in de Delta) and this is why growth and upscaling is considered of vital importance. 'The focus in Venlo lies on international upscaling and procurement of international cooperation', this document says loud and clear (Anonymous 2009). Venlo should produce food and organise its logistics as a world player.

This focus on upscaling clarifies the logics of defining innovations as the results of systemic changes in huge structures such as specific food markets and the development of new niches. In the SAIL programme this focus is deployed with a dynamic oriented language that adheres to the romantic ideas of entrepreneurship. The programme speaks of positive energy of the entrepreneurs who want to move forward. It is about realising direct connections between entrepreneurs, governments, knowledge and educational institutes. It is all about realising and working on a high profile innovative economy. The programmatic support from the SAIL programme is given to initiatives that have proven to be innovative but are not capable of scaling up their initiatives to the level of the world market. A basic idea from SAIL is to put the entrepreneur in a leading position and the knowledge institutions in a secondary. The entrepreneur should deploy his innovation strategy and formulate his specific knowledge gaps simultaneous with the action. The supply demand model of knowledge is thus inverted.

As a logical consequence a new advisory committee was organised around one of the captains of the regional industry. A regional captain of industry (Vercoulen) was given an assignment to clear up the field of these communities and develop more focus. This committee *Vercoulen Verbindt* produced a report, *Greenport Venlo Region: leading in fresh by focus, growth and connection* (Greenport Venlo, 2009) that fits in the common understanding of innovation as basically a process of scaling up. In their problem analysis the region is by far too scattered in its initiatives and organisation to enter the world market in a coherent and innovative manner. To tackle this problem the advice is given to develop an innovation structure that:

- combines a sharply focused innovation programme,
- facilitates the process of knowledge exchange, services, education and inspiration and
- offers a physical meeting place.

The slogan Knowledge, Expertise and Cash flow (in Dutch yet another alliterating name: Kennis, Kunde en Kassa)' is given to illustrate the aspirations of improving the economy. He and his project team introduced the concept of 'knowledge, expertise and cash'. This slogan was taken up in the

networks of regional actors and represented the urge for knowledge-driven innovation. The meeting place was conceptualised in an idea for an Innova Tower, a highly symbolic and dramatic concept of a meeting place for innovators. Again the internal organisation is at stake when making propositions towards regional innovation. More internal coherence is a necessary step towards more competitiveness on world level.

Observations
A structural perspective on innovation is deployed in two different manners:

- with a focus on internal organisation of the region,
- on an ever extending network for finding and creating niches at the fringe of international food supply structures on world level.

All actors relate regional innovation to regional identity in a way that changes in the identity are obligatory for a wider and inclusive process of innovation.

The regional environment as perceived necessitates huge investments in regional focus and coherence and this can be seen as one of the reasons why so much effort is put into institutionalisation of small initiatives.

Although much attention is given to upscaling, the knowledge brokers, fore-runners and politicians lack a grassroots perspective in innovation and tend to marginalise the significance of business innovations by small entrepreneurs.

2.6 Inclusion and exclusion

Until now we have been reviewing and analysing the course of events, their drama and the logical frameworks that tie them together. It provides a first level of understanding how the region constructed its agenda, its interdependencies and its identity by relating to the outside world. Using causal process tracing we have analysed the assumptions about innovations that grounded the numerous meetings and public events. It provides a background of the basic assumptions that scaling up of the agricultural structures is of vital importance. We will now focus on the geographical, political and societal boundaries that are accepted, reflecting the logical assumptions in the regional planning culture. Based on the theoretical considerations of this book, we will show how boundaries are constructed by a simultaneous though intuitive use of inclusive and exclusive concepts.

In the social practice of regional transition, society is considered as a complex of different systems, each with its rules, transaction costs and patterns of change. On the one hand these subsystems of society are well defined, referring to law, policy, politics etcetera. These are essentialist concepts that tend to reiterate the structures of society. On the other hand, more inclusive concepts are in use. The best example is the Mode II society. It designates a certain change in society among people who take a positive stance towards innovation, renewal of structures and have an open mind for new pathways to sustainable growth. Such concepts are useful to dissect specific entrepreneurs, politicians, knowledge brokers and others to classify them as Mode II, and invite them to participate in a platform before adopting them in a community.

Boundaries of inclusion and exclusion are produced in the discourse on regional innovation. At a very basic level the idea of a community and of a network are used to designate settings of innovators and potential innovators. A community is based on membership and therefore on exclusion of those who do not meet the requirements to participate in the regional innovation (the so-called Greenporters). The network is based on attachment and therefore on inclusion of those who have the potential to become innovative or contribute to innovativeness. There are no precisely defined networks: there is no beginning and no end. Communities may emerge from a network, and are for instance designated as a platform before developing into a community. Individuals may migrate from a network to a platform or directly to a community if they have an inspiring vision or if they have access to vital resources. The inclusive concepts have soft boundaries and are defined around a core issue, whereas the exclusive concepts have sharper boundaries and are expressions of structural thinking. Identity

plays a significant role here. The Greenporter identity corresponds to the Mode II society within the region. Just like this Mode II it is inclusive. Anybody from anywhere can become a Greenporter. If the identity is grounded in the specific region or a specific village, it is exclusive.

The simultaneous use of inclusive and exclusive concepts in greenport Venlo is illustrated by Smeets (2011). People with energy, who were capable of out of the box thinking and open for innovation were included for participation while those who said 'yes, but' were not included. It also depended on the stage of the project whether people were included or not. Out of the box people were included in the first phases of creative thinking and later on, when decisions had to be taken, entrepreneurs and politicians had been involved (Peter Smeets, personal communication).

It shows how inclusion and exclusion is part of the action. Here we can refer to the difference between the project and the programme. The project with sharp boundaries in terms of resources and time, which contrasts with the activity of programming, more open ended tending to adopt initiatives en route.

A further example of inclusiveness can be found in the territorial concepts that are used in the regional transition. For example one may take a closer look at the so-called Deurne Session. Food Region Helmond was included during this Deurne Session (Arnold,2011), despite the fact that Deurne is part of Brabant. So this Deurne Session has a symbolic name, indicating the proliferation of the Venlo region. Deurne belongs to the region of Eindhoven, the Brainport region. So the Deurne session was one step towards the Brainport. The concepts of Greenport and Brainport are utterly different, but not mutually exclusive. It is very difficult to acquire both statuses. This example illustrates the openness and inclusiveness of the territorial concepts of Brainport and Greenport. Besides these, others and more exclusive are in use such as Northern Limburg, representing the full collection of municipalities lying in the northern part of the political entity of the province. Both inclusive and exclusive territorial concepts are accepted by regional actors.

Knowledge

The use and conceptualisation of knowledge also is hybrid: the essence of innovation seems to be about finding the right combinations of general universal memes of knowledge with the specific individual particular knowledge of the entrepreneur. Particular knowledge, appropriated by an entrepreneur, is exclusive. As has been discussed above, scientists and knowledge brokers have a strong preference for general knowledge that has acquired a certain status in academic circles and can be applied in different contexts, whereas practitioners are more interested in specific knowledge that provides them an advantageous position in the world market.

Innovation and profit

The concept of innovation is poorly defined, but here also we can observe how more open and more exclusive concepts are used simultaneously. The concept of a niche is exclusive, because it presupposes a sharp observer to see the niche and occupy it. Niches are portrayed at the fringe of other, well-established structures that may provide good opportunities for entrepreneurial growth. Novelties, on the contrary, are more inclusive, because they focus on leaving the usual pathways and transcend the obligatory regulation of a system. Anyone can contribute to a novelty, those who are undertaking the effort and those who are providing the knowledge or the formal space for experiment. If actors are talking about profit, they refer to the group of entrepreneurs that may benefit from the regional innovation and therefor it is an exclusive concept. Other, even more exclusive concepts are applied when talking about very specific business groups, such as mushroom producers. The concept of sustainable growth is applicable to any entrepreneurs and also to NGOs and knowledge workers. It is an inclusive concept that contains a moral disposition but no sharp boundaries and distinction between sustainable and non-sustainable growth.

Finally, almost all sustainability concepts in use are open, inclusive, grounded in the idea of common values underlying sustainability in every aspect. They are used in the discourse on regional innovation to include those who are worried about the environmental impacts of a growing economy. They can be seen as key concepts, which are negotiated in the transition arena and wrapped around emotional plots. These negotiations ultimately establish and confirm their specific meaning in this specific context.

The simultaneous use of inclusive and exclusive concepts is very interesting, because it has not been recognised before as a vital process in regional innovation. In the case of Greenport Venlo an overview of this boundary-creating mechanism is given in Table 1.

Table 1

The use of inclusive and exclusive concepts to mark the boundaries of a regional transition

Concepts in use	Exclusive	Inclusive
Territorial	Municipalities of Northern Limburg, Greenport Venlo, Venlo city	Southeast Netherlands, Venlo region
Knowledge	Scientific knowledge, farmers wisdom	Knowledge infrastructure, skills
Society	Science, law, politics, art	Mode II society, transition
Identity	Greenporter identity	Northern Limburg identity
Economy	profit	Sustainable production
Innovation	Forerunners, levels of change, niches	Open mind, out of the box, novelties
Action	Project	Programming
Sustainability		C2C, innovation ecosystem, People, Planet and Prosperity

The simultaneous use of exclusive and inclusive concepts provides the tools for effective management of a broad network of regional actors. The analysis of the regional innovation discourse shows how this is done rather intuitively, without seeing it as a tool for selecting, programming, empowering and innovating. This observation is preliminary, because it is based on an incomplete analysis of the regional innovation discourse. It deserves further discussion however, because it provides a new perspective on the management of regional innovations.

2.7 Conclusions

Venlo is taken up in a strong movement of regional transition. The transition started with a unique combination of failure and success stories. Different actors have different views on these failures and successes. In the dramaturgical analysis we saw how the forerunners took the lead and left several hot societal issues behind, solely addressing them with a mixture of nice sounding concepts that advocate the need for regional change. Strong appeals on changing the regional identity have been vocalised and some even put the newly constructed Greenporter identity at centre stage.

The analysis of this study indicates a very contingent process of groping in the dark, establishing the boundaries of activities, of innovativeness and of the region itself. At the heart of this process the simultaneous use of inclusive and exclusive concepts are used to construct and deconstruct interdependencies, as an incremental way to make progress and define what makes sense for the region in its striving for innovativeness.

Further analysis of the planning culture revealed how different perspectives on innovation or system innovation are used in discourses on the lack of cooperative structures, the need for niche finding in the world food market, whereas the knowledge brokers focus on a need for transdisciplinary knowledge.

The concepts that are embedded in structural thinking are fruitful for comparing regions and their innovation performances. There is a danger however that structural thinking has a bias towards the big scales, the best entrepreneurs, the proven innovations that have to be upgraded. It overlooks the incubation of fresh ideas. This may hamper regional innovation as it becomes difficult for small players in the field to get attached to the well-defined exclusionary structures that are in charge of the resources and the qualifications (what is considered an innovation and what is not). The public administrations that are involved in this regional transition observed in hindsight that 75% of the funding went to intermediary organisations instead of innovative projects (José Vogelezang, personal communication).

As a result, both of strategy and of the ambivalences in the conceptual approach of regional innovation, only a selection of the regional actors is addressed by the process. The small actors, lodging the potential for grassroots innovations, are unintentionally being excluded because of the logics in use.

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Interviews

Knowledge brokers and researchers

Paul Kersten, Alterra, Regiodialoog (inspirator/ facilitator)

Remco Kranendonk, Alterra, Streamlining Greenport Venlo (facilitator)

Margreeth Laurentzen, Projectleader Streamlining Greenport Venlo, Knowhouse

MadeLEIne van Mansfeld, Alterra, Streamlining Greenport Venlo (facilitator)

Peter Smeets, Alterra, Regiodialoog (inspirator)

Governmental actors

Mark Verheijen: Alderman Venlo

Jos van der Heijde: Civil servant Venlo

Hans Caubo, Regieteam Greenport Venlo, Province of Limburg

Entrepreneurs

Hans Rutten, Scelta Mushrooms BV

Jaap van den Beukel, Matricaria flower production

3 Betuwse bloem

Eric Poot, Sietze Vellema

Abstract

The transition programme Betuwse Bloem was carried out to enhance economic and sustainable development of the horticulture sector in the River Area in the province of Gelderland, the Netherlands. Horticulture in the River Area takes place in five highly specialised clusters, separated both spatially and organisationally. The premise at the start of the public-private initiative of Betuwse Bloem was that uniting the clusters will lead to synergy and a powerful competitive area. This should be rewarded with the Dutch Greenport Status. On an institutional level the question arises if and how juxtaposed living and working professionals commit themselves to the ambitions of overarching Betuwse Bloem.

3.1 River Area

'Betuwse Bloem' (Flower of Betuwe) is the name for a programme with the aim to stimulate horticulture in the River Area ('Rivierengebied') in Gelderland, the Netherlands (Figure 1).

Figure 1 *Location of the River Area in the Province of Gelderland in the Netherlands*

The River Area lies roughly between Gorinchem in the west and Nijmegen in the east. It is embedded between the Rhine and Waal rivers and the A12 and A15 motorways. Together with the Betuwe Lijn railway, these rivers and motorways form a cluster of important west-east connections for the supply of European markets, especially Germany. Horticulture is a relatively important economic sector. The Rhine, Waal and also Linge rivers shaped the landscape, and for very long time horticulture has been

practised on the fertile banks of these rivers. The rivers are also important transport routes. They also played an important role in history: as a frontline in wars (among others the Eighty Years' War, the French-Dutch War), a supplier of water - but also a risk factor for flooding - and a boundary marker in political and religious structures. The eastern part of the Bommelerwaard area, for instance, has been under influence of the Roman Catholic church for centuries, due to the proximity of the Diocese of Den Bosch. The western part of Bommelerwaard is strictly Protestant. Among others, this religious aspect affects the crops that are grown in the areas: Protestant growers do not work on Sundays and therefore do not grow crops like mushrooms, whereas Catholic growers have no problems with working on Sundays.

In the River Area a number of municipalities are located. Horticulture subsectors fruit, trees, mushrooms and greenhouse horticulture are concentrated in different municipalities in so-called clusters. In the River Area, five of these clusters are distinguished: a fruit cluster ('Betuwe'), mushrooms around Maasdriel, avenue tree nurseries around Opheusden, greenhouses with a focus on cutflower production in 'Bommelerwaard' in the western part, and greenhouses with a focus on potted plant production between Arnhem and Nijmegen in the east. Universities of Wageningen (Wageningen UR) and Nijmegen (RUN) are nearby (Figure 2).

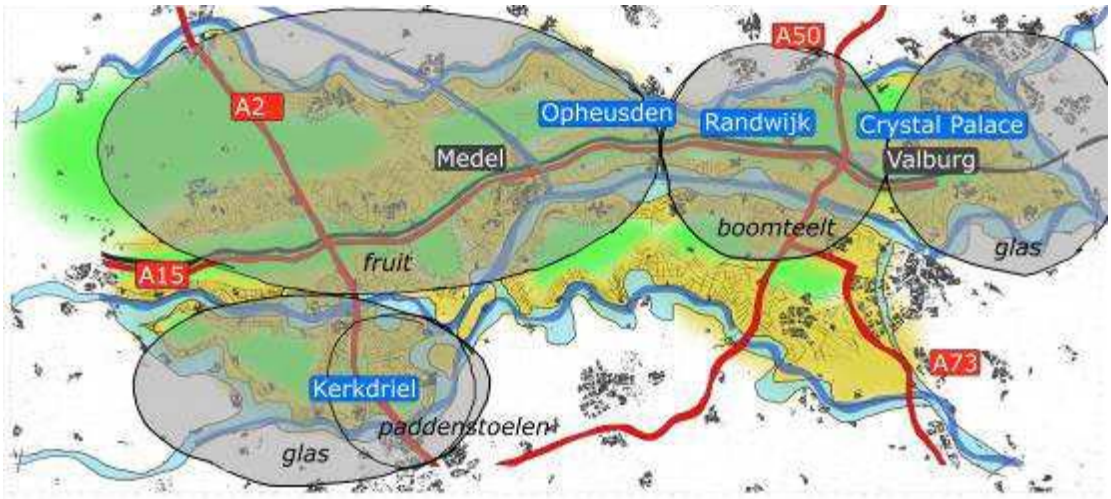

Figure 2 *Location of the different horticultural clusters in the River Area*

In the name Betuwse Bloem, 'bloem' (flower) refers to horticulture; also, the structure of the region can be represented as a flower, with the A15 motorway as the stem and the clusters as the flower petals.

Horticulture in the River Area can briefly be characterised by the following numbers (based on Jukema and Ruijs (2011):

- 1,200 companies with primary production
- 8,000 ha
- 19,600 employees
- € 670 million gross added value per year.

The five clusters are in close proximity to each other: some 75 km between Bommelerwaard in the west and East Betuwe in the east. The horticultural sector generates considerable added value and employment. It faces some important challenges: the average company size is relatively small (Jukema and Ruijs 2011) which leads to a relatively unfavourable performance; logistical arrangements are fragmented and new developments clash with traditional landscape features (Fontein *et al.* 2010). Probably with the exception of the fruit sector, the horticultural clusters are not very significant and influential in terms of political power compared to other horticultural clusters in the Netherlands.

3.2 National policy: Greenports and Top Sectors

In the Netherlands, national spatial policy is to concentrate horticulture in a few designated areas. The most important horticulture regions have a so-called Greenport status. The name 'Greenport' was launched in 2004 in the *Fourth Memorandum on Spatial Planning* (*Vierde nota Ruimtelijke Ordening*) by the Dutch ministry of Housing, Spatial Planning and the Environment. Greenports are spatially bounded clusters of horticulture production and trade of significant (economical) size. The Greenport concept has a theoretical basis in Porter's cluster theory (Porter 1990). In this concept, the proximity of companies in the same sector creates competitive advantages due to economies of scale and network effects. A well-known example of a cluster is Silicon Valley. In 2004, the Dutch national government granted five regions the Greenport status: Westland-Oostland (greenhouse horticulture), Aalsmeer (floriculture), Boskoop (trees), Lisse (flower bulbs) and Venlo (mixed sectors, with special notice for logistics). In 2011 also Noord-Holland Noord (mixed sectors, with special notice for breeding: 'seed valley') received an official Greenport status. The Greenports joined forces, and created an influential lobby platform, called Greenport Holland (GreenportHolland 2011).

In 2004, the national 'Innovation Platform' started by former prime minister Balkenende, developed the 'sleutelgebieden' (Key Sector) policy. Horticulture was present in one of the six Key Sectors: Flowers and Food. The Key Sectors were seen as the jewels in the crown of the Dutch economy, and instrumental to meet the ambitions of the Lisbon agenda to make Europe the most competitive and dynamic knowledge economy worldwide. Key Sectors have a high level of technology and knowledge, there is a high degree of self-organisation, and they contribute significantly to the competitiveness of the Dutch economy (Scheepbouwer *et al.* 2009). In 2011, the minister of Economics, Agriculture & Innovation Verhagen introduced the Top Sector policy. 'Horticulture and Propagation materials' was designated as one of the nine 'top-sectors' (Verhagen *et al.* 2011). The Top Sector can be regarded as a follow-up of the Key Sector policy, both examples of 'Smart Specialisation' aiming at stimulating a limited number of 'winners'. Only Top Sectors receive public funds for innovation. This is done in public-private partnerships, and private enterprises are getting more influence in directing public innovation budgets. Greenport Holland is designated as the organisation that coordinates agenda setting and research programming by private industry, government and research institutes for the top-sector Horticulture.

Instruments in both spatial and sectorial policy were among others several innovation programmes. An example of a programme to stimulate designated sectors in regions was the public-private 'Pieken in de Delta' (peaks in the lowland) programme. An example of a programme to stimulate agriculture was the public-private 'Transforum' programme, which was financed by the Dutch government (from natural gas revenues). It started in 2005 and ended in 2010. The objective was the development of a sustainable agriculture in the Netherlands, combined with transformation of the national research infrastructure for better implementation of research outcome in practice (Transforum 2011).

Wrapping up the perceived benefits of a Greenport, it brings competitive advantages through economies of scale and network effects; due to the Greenport status, budgets for improvements in infrastructure and economic development will be received; it creates lobby power via the Greenport Holland network, and the national top-sector innovation agenda can be influenced; and it can be used in PR strategies as a proof of the importance of the region.

3.3 Betuwse Bloem

Representatives of regional government and interest groups of the horticultural industry wanted to put the River Area in Gelderland on the map as an important horticultural area of significant economic importance and with international pretensions. Therefore they started the Betuwse Bloem programme in 2005, with a study called 'Development of a vegetal agro corridor across motorway A15' (Boekema *et al.* 2006), which was conducted by representatives of farmer interest group LTO, east-Netherland development company Oost NV, local-based consultant BoerEnAdvies, and knowledge institutes Wageningen UR and Radboud University Nijmegen. The conclusions were adopted by governor

Keereweer of the province of Gelderland, and he started public-private partnership 'Betuwse Bloem'. Initially, the province of Gelderland financed Betuwse Bloem for the period 2007-2009, and this first phase was extended until 2010. In 2010, an effective lobby lead to political support at the province for facilitating a second phase for the period 2011-2014. In 2011 the scope and agenda were set for implementation in the period 2012-2015.

The main objective of the Betuwse Bloem programme was to profile the River Area as an import horticultural area: preferably with a Greenport status because of the implicit and explicit benefits of such a status. Activities of the Betuwse Bloem should enhance cooperation, education, development of sustainable clusters (energy and bio-based economy), innovation and logistics, and keep the landscape attractive for inhabitants and tourists. So a regional transition was needed.

Betuwse Bloem is organised as a network: a group of representatives of different companies and institutes, which has a minimum of formal structures and relies on teams (in Betuwse Bloem: 'platforms' and 'pacts') operating on a project basis. In the centre of the network, a platform of entrepreneurs and a governmental platform operates. Within Betuwse Bloem, each of the clusters is organised in a pact: mushroom pact, fruit pact, avenue tree pact, greenhouse horticulture pact 'Bommelerwaard' and greenhouse horticulture pact 'Arnhem-Nijmegen'. A project team coordinates activities of the platforms and pacts (Betuwse Bloem 2012). The financial capacity of Betuwse Bloem consisted of cash from the provincial government and additional funding from among others Transforum national transition programme, but also in-kind (hours) from the different stakeholders involved.

3.4 Dramaturgical analyse of Betuwse Bloem

To get a more or less formal description of chronological events in Betuwse Bloem, an analysis of articles in the Dutch press was conducted. The search term 'Betuwse Bloem' revealed 161 articles in LexisNexis.academic.nl (from 2006 until December 31 2011). The first article was published in September 2006. Most articles by far were published by De Gelderlander (138), followed by Brabants Dagblad (15). Both are regional newspapers, which emphasises the strong regional scope of Betuwse Bloem. It is remarkable that no articles were found in professional horticultural journals.

2006-2007: Start of Betuwse Bloem
In 2006 and the first months of 2007, articles refer to the start of the Betuwse Bloem programme. Representatives of interest groups and province stressed the importance of cooperation and knowledge dissemination, on topics such as logistics, entrepreneurship, economic development, product innovation and region branding. Municipalities saw the perspectives for economic development and employment. But in some municipalities opposition against Betuwse Bloem plans was reported: against the growth of the greenhouse sector because of the quality of the landscape, against a mushroom company for legal issues in the past, and because of the vagueness of plans in general.

The start of smaller programme teams within the Betuwse Bloem structure are mentioned, the so-called 'pacts'. The Fruit Pact is the first pact mentioned. In 2007 newspapers also mentioned the aim to connect with the Greenports organisation in the Netherlands. The greenhouse region between Arnhem and Nijmegen already called itself a 'greenport', but that status was not granted by national parties because this cluster is too small. In December 2007, January 2008, the Betuwse Bloem programme is mentioned as an argument for locating the new flower auction 'Plantion' in Tiel (part of the River Area) instead of Ede (outside the River Area), but shareholders decided otherwise.

2008-2009: Betuwse Bloem in progress
The Fruit Pact reports progress. It is the most frequently mentioned pact in the LexisNexis articles analysed, with the most projects, and the most clear results. In 2008, also other Pacts (mushrooms, greenhouse horticulture) started activities. Governor Keereweer was satisfied with the progress of Betuwse Bloem, and several other stakeholders explained again the benefits of cooperation and combining forces to improve the position of the regional horticulture in a national and international context. This continued in 2009, when Betuwse Bloem was also mentioned as a programme that would

benefit from infrastructural works such as connecting highways and solving traffic problems on bridges across the Rhine river. In November 2009, the province of Gelderland together with six entrepreneurs installed Regional Innovation Centre (RTC), also a project under the Betuwse Bloem umbrella. RTC should support individual entrepreneurs in the River Area who want to innovate, among others by linking and brokering. Another Betuwse Bloem project was launched in the same period: the Transforum financed project Blooming Cluster. Because Wageningen UR was participant in this project, Betuwse Bloem stakeholders concluded that their programme was finally taken seriously by the scientific community as well.

The objective of the Blooming Clusters project was to enhance cooperation between companies in Blooming Clusters and within the horticulture supply chain, to strengthen their economic position. The Blooming Clusters project consisted of a number of activities: (1) Vision and agenda setting for the themes logistics, energy and landscape for the horticultural locations in the River Area; also preparing an overarching vision. (2) Strategy formulation and building business cases Mushroom Cluster Velddriel, Agribusiness Center Opheusden (trees), Greenhouse theme park Crystal Palace and Fruit Knowledge Center Randwijk. (3) Linking with related networks including Greenport Venlo and Biopark Terneuzen. Also a lot of attention was paid to communication, including the use of new social media like movies on YouTube channel 'Betuwe flips'.

Due to all initiatives, the self-confidence of the Betuwse Bloem partners was rising. Betuwse Bloem received credits as a significant horticultural cluster by the national Greenports organisation, during a meeting organised by Betuwse Bloem at the Fruitmaster auction in the River Area, in November 2009.

2010: Finish of the first phase of Betuwse Bloem
In 2010, results of the Blooming Cluster logistics project, sustainable energy & biobased economy project and development of 'icon' Crystal Palace were presented in so-called business cafes. Fruit Pact, Mushroom Pact, Greenhouse Pact Arnhem-Nijmegen as well as the Betuwse Bloem umbrella programme reported progress. The start of Greenhouse Pact Bommelerwaard was announced in November.

In the last months of 2010, governor Keereweer declared that the province wants to stop subsidising Betuwse Bloem. Ferry Hollinger, chairman of the business platform Betuwse Bloem, supported by other stakeholders (including the Chamber of Commerce) started a lobby for extending the funding of Betuwse Bloem by the province of Gelderland. They stressed the successes obtained: added value was created, new connections were established, dynamics and commitment were enhanced, and Betuwse Bloem claimed its position on the national Greenport agenda. They also emphasised that some initiatives take a long time, especially infrastructural projects, and need extended support from the government.

On February 3 2011, the first phase of the Betwuse Bloem programme was ended officially in a meeting in Zetten in the River Area. Stakeholders like provincial governor Keereweer, Transforum spokesman Bordewijk and participants in the Blooming Cluster project BoerEnAdvies and Wageningen UR, evaluated four years of Betuwse Bloem.

2011: Betuwse Bloem continues
The lobby for extension of the Betuwse Bloem programme was successful. In February 2011 provincial subsidy for Betuwse Bloem was extended for another year. The province stated the explicit condition that individual entrepreneurs be more involved in the different initiatives. This involvement of business parties is mentioned several times in the analysed articles as an aspect that needs improvement: in October 2010 by province official and project manager Kees Pieterse, in November 2010 by alderman De Ronde of municipality Buren (participant in the Fruit Pact) and by governor Keereweer in February 2011 at an evaluation moment of four years of Betuwse Bloem.

In 2011, soon after the evaluation of Betuwse Bloem, Keereweer withdrew as governor. His successor was Jan Jacob van Dijk, who continues the policy of Keereweer regarding Betuwse Bloem. In 2011 Buck Consultants International presented their research, commissioned by the province of Gelderland, on the economic value of Betuwse Bloem (Michon and Koekebakker 2011). They concluded that

Betuwse Bloem is the second largest horticultural cluster in the Netherlands, after Westland-Oostland but before the Greenports in Venlo, Aalsmeer, Boskoop and Lisse. According to *Gelderlander* journalist Walter Post, Van Dijk seemed a bit jealous of Greenport Venlo. Van Dijk presumed that Venlo earned their Greenport status with the organisation of the Floriade Horticulture World Exhibition in 2012. In a meeting in May, Van Dijk mentioned that a Greenport status is important for Betuwse Bloem because of representation of River Area interests and common profiling in Greenport Holland. He asked for plans which would bring Betuwse Bloem the same status as Greenport Venlo. He wanted stronger connections with Food Valley (in Gelderland, near Wageningen) and Health Valley (also in Gelderland, near Nijmegen). Coincidence or not, in December 2011, the River Area announced its candidacy to host the Floriade in 2022. (Unfortunately for Betuwse Bloem, the Floriade organisation decided in 2012 that Almere would be the new host.)

Later in 2011, Betuwse Bloem organised a meeting to put the development of Biobased Economy in the River Area on the agenda. Several Pacts reported progress, among them Greenhouse Pact Arnhem-Nijmegen about the reconstruction of the local greenhouse sector. Results in the tree nursery pact around Opheusden were not very promising: plans to build an Agro Business Centre were not adopted by growers. In December, the province mentioned their investment in a - revolving - innovation fund for horticulture entrepreneurs, which they hoped would help to stimulate innovation in Gelderland. The name of the fund: 'Betuwse Bloem Innovates'.

3.5 Projects & Pacts

The programme of Betuwse Bloem is an 'umbrella' of projects, some initiated by the Betuwse Bloem project team, or the parent organisations of the project team, especially the Province of Gelderland. But most projects were initiated by the different Pacts. Until 2011, more than 70 projects were already conducted, with different scopes: from entrepreneurship courses, energy scans of cold storages, to feasibility studies for multi-modal logistic hubs, lobby projects for improving highway infrastructure and design studies for 'iconic' experience centres like Crystal Palace. (Engelbart and Schuur 2011).

In general, projects initiated by pacts are more tailored to the specific circumstances of companies than those initiated on the level of Betuwse Bloem. Pact-initiated projects are in general more specific for one horticultural subsector, or more specific for the exact location. Subjects of the projects directed by Betuwse Bloem are more inclusive. This is illustrated in Table 2. In this table, projects from the overview by Engelbart and Schuur (2011)were assigned to classes for specific and more general sector (innovation, sustainability etc.) and location (infrastructure, spatial planning, etc.) subjects. Greenhouse pact Bommelerwaard is missing in the overview; projects in this pact were started in 2012, after the overview was made (in 2011).

Table 2
Types of projects in pacts and Betuwse Bloem programme

	Subsector specific	Location specific	Horticulture general	Region general
Greenhouse pact Arnhem Nijmegen (n=14)	29%	50%	14%	7%
Avenue tree pact (n=19)	63%	21%	11%	5%
Fruit Pact (n=16)	56%	31%	6%	6%
Mushroom Pact (n=14)	64%	7%	29%	0%
Betuwse Bloem programme (n=10)	0%	0%	40%	60%

Tables 3 and 4 offer some examples of the different projects.

Table 3

Examples of projects initiated by pacts

	Horticulture subsector specific	Location specific
Greenhouse Pact Arnhem-Nijmegen	Vision on sustainable energy for greenhouses	Reconstruction greenhouse area Huissen-Angerden
Avenue Tree Pact	Sustainable harvest and storage of trees	Improvement infrastructure for avenue tree centre Opheusden
Fruit Pact	Innovative crop protection spray technique for orchards	Fruit street Ingen
Mushroom Pact	Alternative processing of 'champost' (mushroom propagation material)	Feasibility study for a river harbour at Hedel

Table 4

Examples of projects initiated on Betuwse Bloem programme level

	Horticulture in general	Regional
Betuwse Bloem	Opportunities of biomass Horticulture education	Blooming Clusters: vision & strategy development on landscape, logistics and energy grids

Most of the subsector-specific projects are about innovations in cultivation or processing techniques. Although implementation of the results in other clusters is not necessarily impossible, implementation in the clusters concerned is more likely because of adaption to local circumstances and a closer involvement of entrepreneurs who are more likely to be trusted because of their proximity.

All five pacts are initiated by 'founding fathers'. For instance, for Greenhouse pact Bommelerwaard: Province of Gelderland, Rabobank Bommelerwaard, and two local associations for enhancing horticulture: 'Vereniging tot Verbetering van de Tuinbouw in de Bommelerwaard' (VVTB) and 'Stichting Stimulering Tuinbouw Bommelerwaard' (SSTB). Every pact has a manager; for Bommelerwaard the pact manager is an employee of LTO Noord Projecten. Pacts formulate ambitions and a strategy to achieve these via projects. Greenhouse Pact Bommelerwaard organised a first meeting for the growers in the region. Some 70 growers attended this meeting (BetuwseBloem 2012). The pact management made a pre-selection of seven relevant themes, and invited experts for introducing them. The seven themes were entrepreneurship, image, employment strategies, water use, energy use, markets and logistics. Together with the experts, the growers generated a number of project ideas and set priorities. Greenhouse pact Bommelerwaard intends to conduct 20 projects from this list in four years. The pact management organises financial support, mobilises the network, is in charge of communication on pact level, and participates in the Betuwse Bloem programme team.

The boundaries of the pacts coincide with the boundaries of the clusters, geographically - rivers - but presumably not only geographically. Clusters seem to work quite separately from each other. For instance, unions that protect interests, like farmer organisation LTO, still have a strong local basis, and the greenhouse part of LTO ('LTO Noord Glaskracht') has two different sections in the province of Gelderland: Gelderland Oost - where greenhouse pact Arnhem-Nijmegen is located - and Gelderland West - where greenhouse pact Bommelerwaard is located. The administrators of these interest groups are entrepreneurs with their companies located in the area of concern, so they are personally involved in what's happening in the specific region in the specific subsector. Like almost every horticulture or horticulture production company in the Netherlands, most of those in the River Area are family businesses. There are strong family ties within subsectors. Furthermore, Dutch horticulture has a rich history of region-based cooperative organisations for, among others, selling products at auctions, purchasing inputs and banking.

3.6 Linking clusters to Betuwse Bloem

The described specificity makes it more attractive for entrepreneurs to commit themselves to pacts, as the example of Bommelerwaard indicates. But on the other hand it raises the question what the added value is of joining clusters for among others knowledge development and innovation, important mechanisms in the construction of a competitive region.

The regional transition was the ambition of members of the government and boards of governors and directors. Their ambition was to receive a Greenport status, activities were formulating visions and strategies, and organising public and private funding. The paradigm behind links to general strategies about Greenports, logistic (and knowledge) infrastructure. Representatives of provincial and municipal government presumed that a joint ambition to improve competitiveness by improving infrastructure, creates new bonds between stakeholders in the area by itself.

Although on the Betuwse Bloem programme level the importance of cooperation, tuning and commitment were recognised, it is not clear how entrepreneurs and their existing networks can find a place in the Betuwse Bloem regional strategy. On a regional level, Betuwse Bloem linked to the clusters on local level via the pacts, but the internal links in clusters seems to be much more robust and cohesive. The cooperation in the clusters appeared to have a professional background, being engaged in similar horticultural sectors, and that is something else than a regional programme. It seems relevant to get more insight into the way entrepreneurs and related stakeholders have cooperated in their professional specialisation for years. A comparison can be made, among others, with guilds - institutions with their own paradigms and rules - on accession, doing business, handling problems and dealing with uncertainties and risks.

For managers, practitioners and researchers in a regional programme like Betuwse Bloem it is necessary to know and acknowledge the practices of existing professional associations. It provides the opportunities to connect the overarching regional programme to the capacities and ambitions of the highly-specialised professionals in the area. Betuwse Bloem has recognised this challenge, and established a business platform. In the business platform, growers and entrepreneurs from the different clusters were members. The chair of the platform was former auction director Hollinger. Hollinger was quite active in the lobby for Betuwse Bloem, as the dramaturgical analysis showed. The question is, however, to what extent the entrepreneurs in the different pacts were really represented by members of the business platform, or whether the business platform was a part in the organisation that had to be installed from a programme management point of view. The observation is that the influence of the entrepreneurs via the business platform was increasing through the years. Wageningen UR, with a region-based knowledge institute in Randwijk, located very close to the tree nursery cluster in Opheusden and the Betuwe fruit cluster, also responded to the challenge of getting close connections to the business networks in the clusters, by establishing a regional knowledge centre, aiming at short communication and knowledge dissemination lines with the clusters.

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4 Connecting global ambitions to regional realities - A process review of agropark development in the Noordoostpolder

Pieter de Wolf, Esther Veen

4.1 Introduction

This chapter covers the project 'cradle-to-cradle agropark Flevoland'. This project, initiated in 2008 and finished in 2010, used the concepts of cradle-to-cradle (C2C) and agropark (or agro clusters) strategically in order to identify opportunities for linking individual businesses in clusters. General concepts that were driven by global sustainability objectives were connected to local ambitions. This required a process of brokering, in which bounded systems were recognised and abstract concepts translated into their discourses.

By studying the narrative, or story, of this case in detail, we uncover instructive events - important mechanisms that generated the observed outcomes. Looking at these events within context, it is possible to specify the features and dynamics of the region that were decisive for the outcomes of the project.

This chapter is organised as follows. First, we shortly describe the concepts cradle-to-cradle and agropark and explain the methods used for analysing the case. Section 4 describes the context of the region in which the project took place, and Section 5 the narrative of the case study. In Section 6 we analyse the interventions that made the project work. Section 7 explains this in the context of the region. We end with a short conclusion.

4.2 Concepts

Two concepts are of specific importance in this chapter: cradle-to-cradle and agropark.
The concept of cradle-to-cradle (C2C) was introduced by Braungart and McDonough (2002) and questions the usual product cycle that ends with waste. The cradle-to-cradle philosophy perceives waste as a possible resource for other production processes. The philosophy leads to a different design of production processes, linking them together.

Smeets (2009: 21) defines an agropark as 'a spatial cluster of agrofunctions and the related economic activities. Agroparks bring together high-productive plant and animal production and processing in industrial mode combined with the input of high levels of knowledge and technology.'

Although C2C is designed for products and buildings, its discourse also suits the agropark concept (Industrial Ecology, 2009). Both concepts - cradle-to-cradle and agropark - aim towards a higher resource use efficiency. This implies not only a lower net input of resources, but also a lower cost level. Another feature of agroparks is a potentially higher investment capacity and knowledge level (De Wolf, 2010).

4.3 Methods

Two main research methods were used for developing this chapter. First, the first author was one of the project managers of the case described. Although at that time not involved with the aim of researching the case, his close participation gives many insights that were useful for the analysis. Hence, ex post this author can be seen as an action researcher, engaged in a specific and localised change concept. Second, the second author executed an elaborate document study. She studied and analysed minutes of the meetings held, reports and project proposals of the project, and annual reports of TransForum. Additionally, she interviewed the first author to get more factual data about his role and put information in a time frame.

4.4 Context - farmers in the Noordoostpolder and Ens

The cradle-to-cradle agropark project centres around Ens, a village in the Noordoostpolder. The Noordoostpolder is the most northern part of the Dutch province of Flevoland (see Figure 3).

Figure 3 *Location of Noordoostpolder (Source: en.wikipedia.org/wiki/Noordoostpolder)*

4.4.1 Historic context

The Noordoostpolder was reclaimed from the former Zuiderzee in the 1940s. The area was designed and developed for agricultural purposes and was strictly planned. The Noordoostpolder was not only designed spatially; also the farm set-up was carefully determined, by analysing soil types and their suitability for various crops. This resulted in a dominance of mixed and arable farms, with small areas for fruit and vegetable production. The most unsuitable patches were used for building the villages or for forest development. In order to get the best farmers on the largest farms, even farmers themselves were selected.

Much has changed since then. The government has gradually withdrawn its influence on the farm yard: from the late 1970s onwards, farmers were no longer restricted to specific crops. The last government intervention on the farm size was the forced merging of all 12-ha farms into 24-ha farms in the early 1980s. Since then, farmers mainly followed their own development routes, resulting in a wide variety of more or less specialised businesses and a decreasing number of farms.

A nice illustration of this process of specialisation is the vegetable production area in Ens: around 1950, 26 farms of 3 ha were developed - at that time a respectable size compared to other regions in the Netherlands. Currently, approximately ten of these farms are still in business. Two have developed into 25-ha greenhouse businesses through the buying of various neighbouring farms. Others developed their farmyards into central logistic locations, growing their products in a wide area around Ens or even in other parts of the Netherlands.

The history of the Noordoostpolder has led to a unique society of people who moved in from various parts of the Netherlands. They built the polder from scratch, which also goes for their businesses, family life, and local society. This led to proudness and a deeply felt affinity with the region in its various aspects, which is still present in the later generations of polder inhabitants (see for example Van der Wal, 2007).

4.4.2 The situation today

As said, farmers in Ens are no longer restricted to use only specific crops. However, they have to deal with a number of other difficulties. First, some farmers discovered that local soil quality had decreased below a critical level, causing problems with crop growth and health. One of these farmers was a strawberry plant producer in Ens, who rents various plots in the area every year. With the help of an advisor he discovered that the organic matter content of these plots had decreased year by year, due to an intensive cropping scheme and a lack of organic matter supply. In 2005 he started experimenting with the application of compost and a different nutrient management, resulting in higher yields. In 2008 two colleagues who grew flower bulbs on fields that he had rented before noticed a visible effect in the crop colour. This supported the idea that investments in soil quality would benefit all users of that field.

Second, energy prices increased rapidly in 2008 and 2009. As they use natural gas for heating, greenhouse owners were confronted with a substantial cost increase and started looking for alternatives. Many farmers applied for subsidies on various types of green energy production. For example, one of them commissioned a technical feasibility study for geothermal energy. New technologies for greener energy fitted the aims of local government. The province had set - and realised - high ambitions on sustainable energy production. Furthermore, in 2010 a new alderman for environmental affairs was chosen, representing a party with a strong focus on sustainability.

Third, farmers were frustrated with the municipality as they felt that it was not stimulating business developments. A relevant example was the decision of the municipality to limit the horticultural area in Ens to its current size, in favour of developments at another greenhouse location 10 km away. This caused great concerns for the three big greenhouse owners in Ens, whose expansion plans were no longer realisable. In response to this decision, several farmers started a business foundation ('Revitalising Horticultural Area Ens') and organised an effective lobby towards the municipality. To ensure the support of the local community, they asked Ino, chairman of the local 'community foundation' who also has a large network in local politics, to chair this new business foundation as well. In 2008 the municipality started working on a new spatial planning agenda. The business foundation increased its lobbying efforts, in order to try and remove the expansion limits from the new spatial planning agenda.

4.5 The narrative - developing a cradle-to-cradle agropark

This chapter describes the narrative of the case study, its story. We recognise three phases in this narrative - which in reality were less clearly visible then when studying the case afterwards. See Figure 4 for a summary of the narrative.

4.5.1 Phase 1: developing the idea

The idea for a cradle-to-cradle agropark came about in March 2007. A visit to two sites (Greenport Venlo and a so-called 'New Mixed Farm') inspired Rien[1] to try and transfer the concept of integrating farms into a larger, more innovative and efficient entity to the Noordoostpolder. As the Noordoostpolder is a diversified area, he expected the concept to be specifically suitable here. Rien

[1] Facilitator/coach of TransForum projects in the same region

asked Pieter[2] to get involved in this idea and start up a project. Both Rien and Pieter live in the Noordoostpolder and knew some of the potential farmer participants personally. Together they examined whether the idea was promising and organised two meetings to further discuss it. Rien invited several of his connections, such as the province, the chamber of commerce, the regional economic development company and several farmers. The main conclusion of these meetings was that there were good local opportunities for a project on integrating farms. Another conclusion was that although there was commitment of relevant stakeholders, the project had to be concrete rather than abstract.

Since 'agropark' was suitable as an overall concept to Rien's idea, and TransForum[3] was specifically interested in the development of agroparks, Rien submitted a project proposal to TransForum. The goal of the project was described as 'Developing and designing a socially and economically viable *concept* for a C2C agro-Flevopark in Flevoland in which farmers, financers, governments and research institutes are involved' (Aanvraag Innovatief Praktijkproject TransForum, Project C2C Agropark Flevoland, 2008: 9, own translation, emphasis added). Hence, at this stage the project was about developing the concept of an agropark rather than an actual agropark. The proposal was accepted, but only for the first explorative phase and under the condition that private parties - farmers - show financial commitment. Pieter was appointed project manager. Ino, the chairman of the business foundation, was also involved in the project management, functioning as a representative of and contact for the participating farmers.

4.5.2 Phase 2: exploring potential

In order to enthuse farmers and find out what they would be specifically interested in regarding agroparks, Rien visited individual farmers in person. After that, two workshops were organised during which ideas and opportunities for an agropark were discussed with farmers. Farmers were not fully convinced: before committing to the project they wanted to explore the opportunities further. Moreover, they wanted to involve more and other types of farmers. Hence, more farmers were invited and more meetings organised to discuss the project and build a steady group. During those meetings, the specific themes to work on were also identified: biogas for heating greenhouses, improving soil quality and the development of a logistic hub/trading centre. These three themes reflect the main problems the farmers were struggling with (see Chapter 4). Each theme became the topic of a sub-project. After the themes were decided upon, nine farmers decided to continue participation in the project, three of them from outside of Ens. Each farmer committed to one or two of the themes specifically and further participation required a financial contribution (in order to meet one of TransForum's conditions for further financing).

An important energising event happened during 'PolderFutura 2042', a project by the Young Entrepreneurs board of the Rabobank[4] on future visions for the Noordoostpolder. During this symposium 'agropark' was chosen as the best idea for the Noordoostpolder. Although the idea was not submitted by anyone associated with the project, the fact that others had trust in the concept was encouraging.

Pieter then visited all farmers to get a better impression of their businesses, their plans for the future and the opportunities they perceived for the project. During this phase the province was enthusiastic, but the project managers were worried about the position of the municipality. The municipality seemed reluctant to get involved, which was perceived by both the farmers and the province as a lack of interest. A clarifying meeting showed, however, that the municipality was enthusiastic about the project, but did not see any possibilities to get involved financially. The meeting also made clear that

[2] Researcher at Applied Plant Research, part of Wageningen University and Research Centre, based in Lelystad, Flevoland.

[3] TransForum was a temporary innovation programme with public-private funding. Between 2005 and 2010 it initiated about thirty innovation projects in order to speed up sustainable development in the Agro&Green domain. These innovation projects were supported through research and process facilitation. One of the themes of TransForum was the development of agroparks (www.transforum.nl).

[4] The bank of most Dutch farmers.

the province had funding available in the Fund Economic Development Northern Flevoland, which could only be used for projects that had the consent of the municipality. That way the municipality could contribute to the project without using its own finances.

A new project proposal was submitted to TransForum. This proposal focused on becoming more concrete and exploring concrete options within the themes: 'Various partners develop a common vision for the future, based on a few scenarios. Moreover, farmers explore business opportunities that fit this vision' (Naar een gezonde toekomst voor de Agribusiness in Flevoland. Een verkenning van scenario's en opties, 2009: 1, own translation).

4.5.3 Phase 3; Starting the project

By the summer of 2009 the project team started working on the three themes that were recognised as promising. The themes were developed in separate subprojects. After making a rough technical design, with only a rough indication of investments, plans were checked with the farmers. Having received their approval, the team would design the plan in more detail.

	Rien gets inspired	June 2007		Developing the idea	Phase 1
	Rien speaks to various parties				
With various partners. Outcome: concept should be more concrete	Meeting	June 2008			
Entrepreneurs involved. Outcome: concept should be more concrete	Meeting	Oct. 2008			
Project proposal submitted. Goal: develop concept	Pieter becomes project leader	Dec. 2008			
Rien visits individual farmers in person				Exploring potential	Phase 2
	Meeting	Jan. 2009			
More entrepreneurs involved. First thoughts about the three lines (energy, soil, logistics)	Meeting	April 2009			
	students study possibilities				
Speaking to province about finances		May 2009			
The three lines get more concrete	Meeting	May 2009			
Developing project plan next phase					
Agropark chosen as best idea for future	Rabobank symposium	June 2009			
	Meeting	June 2009			
Pieter visits individual farmers in person					
Speaking to local council about finances		July 2009			
Project proposal submitted		Aug. 2009			
	Meeting	Sept. 2009		Starting the project	Phase 3
Idea: replacing natural gas with biogas from digester	Energy		Developing three themes separately		
Very ambitious because of scale differences					
Decision to develop plan without use of manure --> organic matter for soil improvement					
Exploring possibilities of organic household waste with municipality and waste collector					
Farmer from Marknesse explores options for heat use from digester					
Farmer considered to step out of the project if this theme was not taken seriously	Soil quality		Summer 2010 - June 2011		
Involvement of training bureau					
Soil quality course with fourteen participating farmers					
Idea of distribution centre discussed, in combination with plans of municipality	Logistics				
Idea: digester working on green waste. Meetings with energy suppliers Farmer in Marknesse gets grant to realise drying installation for fodder crops and manure			Energy	situation	Current
Contacts used to finance four networks of entrepreneurs working on soil throughout the country			Soil		
No investors, project stagnated			Logistics		

Figure 4 *Summary of the narrative*

For greenhouse owners, energy was a big issue in 2009, due to a sharp increase in energy prices. The three greenhouse owners involved in the project wanted to replace natural gas with biogas from a digester, which was to be fed with manure and other biomass. The idea had been discussed by them a few years earlier, but was never explored in detail. The project team came up with a plan that was rather ambitious, because of scale differences: the energy use of the three large greenhouses would need large quantities of manure and biomass. The greenhouse owners questioned the large scale of the plan, the high initial investments and the indicated low return on investment. Therefore a new plan was designed, in which no manure was required but which would produce valuable organic matter for soil improvement. With this shift, the energy and soil quality projects were linked together. This plan was also much smaller and the expected return on investment was more attractive. The possibilities of organic household waste were explored with the municipality and the waste collector, but no concrete steps have been taken as of yet. In addition to this project, there was another ongoing project with the energy theme: a dairy farmer from Marknesse explored options to use the heat from the digester on his farm. This remained an individual project; no other farmers were involved. After the project had ended, however, the farmer connected with a farmer from Ens for the sale of the dried organic material from the digester.

Although Soil quality was identified as an important condition for agriculture in the future, the theme remained underdeveloped for some time during the project. However, for one of the farmers involved, working on soil quality was very important. Yearly, he rents approximately 100 ha from various farmers for growing strawberry plants. Therefore, working on soil quality was only useful when in a group. As he felt that not much happened, he considered leaving the project. When Rien and Pieter spoke to him about this, he suggested setting up a soil-quality training for farmers in the area. The project managers then organised a meeting with him and an advisory service, but were not further involved in the programme, besides making it financially possible. The farmer managed to get fourteen of the twenty farmers in Ens to participate in the training. The group developed practises to work together on soil quality. This way, during the course of the project, soil quality became a common challenge for the farmers from Ens. In 2011, the group received a three-year farmer network subsidy to continue the learning process.

A specific feature of agriculture in the Noordoostpolder is the strong focus on primary production. Except for seed potatoes, trading and processing are done by businesses in other regions. Therefore, the ambition of the *logistics & marketing* project was to develop a concept to add value through shared marketing, and to share costs for logistics. In 2010, the idea of a distribution centre was discussed, combined with a plan of the municipality for a large-scale shopping mall for garden and outdoor living. This combination was made because of partly overlapping products and the availability of a suitable location. This theme was the most overarching project, and the most regional in focus. All the participating farmers were involved in this theme (hence, the participating farmers from Ens and three from outside of Ens). However, although there was initial enthusiasm, no-one took the lead. Therefore the plans have not been realised so far.

To conclude, the project went through several phases, from developing the idea and exploring the potential to the real start of the project in which themes were further developed. The project has been successful in bringing farmers together to work on common themes. Local government (both the municipality and the province) was enthusiastic and showed commitment by supporting the project financially. The governments on both scales still have regular contact with the project managers on the three themes, e.g. to inquire about new developments. Now that the project has officially ended, some spin-off initiatives of farmers are still running. Whether this can be seen as a cradle-to-cradle agropark depends on the definition used.

4.6 The process - interventions that made it work

Several strategies, some more consciously chosen than others, were used to connect a global ambition (increasing sustainability by clustering agribusinesses and reducing waste) to a local reality. The most important mechanism that made this work was the way in which the project team dealt with the existence of different bounded communities. The team translated the rather abstract concepts of

agropark and cradle-to-cradle into the different discourse of these communities, thereby meeting the different logistics. This strategy is discussed in further detail below, but first we identify and explain the bounded systems present.

4.6.1 Bounded communities

In the project, several 'bounded communities' can be recognised. Bounded communities are groups of people that speak the same language and follow the same logic. Usually there is not much contact between the bounded communities as they do not speak the same 'language' and they may have difficulties understanding each other. We discuss the three most important bounded communities here, and show how the existence of different communities may lead to conflict.

I. The participating farmers from Ens

The farmers from Ens that participated in the project had problems with the municipality, mainly because they felt that they were not supported in their plans to build new greenhouses or farm buildings. Hence, the main common issue was the obstruction they experienced to developing their businesses. They were therefore all a member of the foundation that was set up to organise a lobby against the municipality ('Revitalising horticultural area Ens'). The struggle is what connected them; in that sense their bounded community is a one-issue group with a temporary character - although this has changed as a result of the project. They found each other in the three themes, which were for a large part connected to their particular problems. Being part of the project and working on sustainability (expressed in the specific themes) was seen as a way to convince the municipality of their contribution to the municipality's aims. Sustainability was thus a common (and strategic) interest, also before the project had started (they had already investigated several ideas and strategies regarding sustainable energy). The project was a way forward in their struggle with the municipality.

The narrative shows exclusion and inclusion mechanisms within this bounded community. Shared goals form an important inclusion mechanism. A shared goal is the struggle with the municipality, but another shared goal results from living and working in the same area. A particular event shows how this works in practice. At one point the farmer that was specifically interested in soil quality threatened to leave the project because he saw no progress. Pieter and Rien prevented this by making it possible for him to start with a training on soil quality. Fourteen farmers joined the training, even though they were not very interested in this theme initially. We hypothesise that these farmers joined to maintain their relations with this farmer, who was an important business partner for many of them as he rented large areas of land each year. Being a close-knit and relatively small community where people meet each other on the streets, this was also in line with Ens' social code. Although soil quality was not a broadly discussed theme before the training started, the group has now developed a common language and understanding on soil quality.

We also recognise exclusion mechanisms, specifically regarding farmers from outside of Ens. Even though farmers from other towns in the Noordoostpolder were invited and in fact participated in the beginning stages of the project, most of the farmers involved are from Ens. Only one farmer from outside of Ens managed to start up a project and he did this individually (the farmer from Marknesse with a digester). Another farmer was actively excluded from the soil quality theme, as the other participating farmers argued that they did not want to work with him: 'He is a different type of farmer.' Again another farmer said that he was too busy and would no longer visit meetings. Farmers may have left the project or decided to work individually because the themes were thought to be promising, specifically related to the farmers in Ens and the problems they struggled with, which made the project more interesting for them than for others. The selection of themes can be seen as 'politics with a small p'; it influences who is interested and who is not, and consequently, who is in, and who is out. In other words, it is a passive exclusion mechanism; since most farmers were from Ens, this was the project's focus.

II. TransForum

TransForum, the main funder, can also be seen as a bounded community. TransForum had an explicit temporary character and a limited focus; its mission was to stimulate innovation in the agricultural

domain with scientific research (TransForum, 2005, 2006, 2007, 2008, 2009). This focus on science is reflected in the intermediary role TransForum played (or intended to play) between scientists from various universities and research institutes, private parties, NGOs and governmental bodies. Boundaries around the community were created with language. The community created its own - scientific - discourse, which was rather well-developed at the time the C2C agropark project started in 2009. A quick review of TransForum year reports gives a good impression: Northwest Europe is characterised as a Delta metropolis and agriculture has to change to meet the demands of this metropolitan environment. This necessary change is framed in transition terms, for which - again scientific - knowledge is an important driver. Projects are framed as learning processes of partners from knowledge institutes, government, NGOs and the private sector. In this learning process, common ambitions are formulated and plans are developed. Hence, by using this specific language and focusing on the role of science, TransForum creates a bounded community in which there is only space for people that understand and speak that language. Moreover, by concentrating on the learning outcomes of projects, TransForum clearly distinguishes itself from others looking for more concrete, practical outcomes.

III. Local government

A third bounded community is formed by the municipality and the province. They share a focus on sustainability. The province is specifically interested in green energy and profiles itself as a front-runner on this theme. The municipality focuses on sustainability in a broader sense. The Noordoostpolder is a millennium municipality[5] and was the host for the 'Agreement of Schokland'[6]. Sustainability is therefore a theme the municipality finds particularly important to work on, even if it does not always know how to put this into practice. After the elections in 2010 sustainability became an even more important theme.

However, the farmers mostly saw the municipality as something they are not. They developed a communication 'against' this system, most notably against the decisions about spatial planning and the restrictions on greenhouse development. Due to the fast developments of the farms in Ens, all farmers have struggled with government procedures. In their perception, the municipality is a slow, very formal organisation, which obstructs rather than enhances business development. Over the years, some farmers became active in politics and entered the bounded community of local government. Interestingly, they seem to have been included in that community: 'We expected he would change the attitude in the municipality, but he became part of it', according to one of the farmers.

To conclude, at least three bounded communities played a role in the C2C agropark project; the farmers from Ens, TransForum and local government. These communities perceive the world differently, have different goals and different strategies to reach those goals. In the case of the farmers, we also showed that there are mechanisms to exclude others that do not 'fit' the community.

Two examples show that bounded communities indeed speak a different language - sometimes quite literally. This is specifically noticeable when the farmers and TransForum are compared, as revealed by an analysis of the vocabulary of both domains. A large part of the first version of the proposal of the C2C agropark project was written by a TransForum representative, who was involved in various agropark projects as a scientist. Terms like metropolitan agriculture, vital clusters, innovation, sustainability, business proposition, societal support, cradle-to-cradle and agropark are important elements in this proposal. When reading the minutes of the meetings with farmers, however, a totally different language appears: replacing natural gas, biogas, soil quality, heat losses, investment plans, cooperation, neighbours, risk, costs, trade, flower bulbs, cows, workforce. Much more concrete and more written from a business point of view.

[5] Together with its inhabitants a Millennium Municipality contributes to achieving the UN Millennium Development Goals,: eight international agreements to halve world poverty. They do this by supporting initiatives from their inhabitants and by stimulating sustainable policies and fair trade (www.millenniumgemeente.nl).

[6] The Agreement of Schokland was an event that asked attention for the state of the Millennium Development Goals (www.schokland.nl).

A second example further illustrates the difference between these two groups. In one of the first meetings with farmers, researchers presented their ideas of an agropark, as at that time the farmers did not yet have a clear idea of what an agropark could be. Researchers presented Greenport Shanghai, a design of a very large agropark. A plan like this was seen as far off from what was feasible and also desirable from the farmers' points of view. The plans were seen as too big, too far-fetched and all-in-all unrealistic. In other words, they were not practical, but conceptual, fitting TransForum's aims of developing concepts and learning from that. Since farmers are looking for concrete business opportunities rather than concepts, the researchers did not 'reach' the farmers.

4.6.2 Brokering for bounded communities

Although this was not necessarily a conscious strategy, the project management decided *not* to bring these bounded communities together. Speaking different languages and having different interests, it would have been difficult to get these communities moving in the same direction.

The strategy chosen was to use brokers from the different systems and connect them with the project management. In each bounded community there was someone who had knowledge of and a connection to the other communities, in most cases also supported by personal relations. Hence, TransForum's project manager who was responsible for this particular project knew Pieter and Rien and their work from earlier projects. He therefore functioned as a broker between TransForum and the project management. A newly chosen alderman of the municipality used to have an organic farm and therefore understood the agrarian business. He was specifically interested in sustainability and was from the area itself. He also had close contacts with Pieter's father-in-law as they were in politics together. Moreover, this alderman identified the ambitions of the farmers in Ens as an opportunity for his policy purposes. He was therefore a good broker between the local government and the project management. The three project managers, Ino, Rien and Pieter, also acted as brokers themselves. Both Ino and Rien had large personal networks in politics and amongst farmers. Ino specifically represented and brokered for the farmers as he was the chairman of the business foundation. Living in the area, Pieter had many connections, also in local politics, but as a researcher he mainly functioned as a broker for TransForum and the rest of his professional network.

Hence, some people were able to broker between two communities, or between a community and the project management. The project management fulfilled a central brokering role, connecting with all communities. In order to 'translate' between communities, both formal and informal meetings played an important role. Brokering often happened in an informal setting; meeting others at seminars but also in church or at birthday parties. Formally, various meetings within groups were organised; the project management planned workshops for farmers, discussions with TransForum and meetings with local government. Individual farmers were visited twice to discuss their future plans and involvement in the project.

Brokers could not only pass and translate information from one group to the other and in that way discuss issues and opinions, they could also be actively used. For example, the alderman discussed above had an interest in the plans of the farmers, because his aim was to increase sustainability in the area. The farmers realised that this alderman could be important for them, as he could influence the municipality. Speaking the language of both communities, brokers can look for win-win situations. The role of informal contacts was also important in this sense. Due to personal connections with people involved in politics, the project management contributed to the election programmes of several political parties. That way they implicitly created room for a C2C agropark, without mentioning the concept as such. For example, Pieter suggested stimulating regional energy projects.

The importance of brokering is demonstrated in the following example, concerning the involvement of society and NGOs. The project monitor (who monitored for TransForum) stressed the importance of the involvement of society. The project management agreed to discuss societal commitment for the agropark plans with the farmers, but rejected the plan to involve citizens or NGOs in the project or invite them to meetings. The main reason for that was that the farmers did not want it at this time. The project managers saw no possibility to push it through. Hence, understanding the mind-set of the farmers and taking them seriously, as well as representing them in a discussion with TransForum, was

important for the success of the project. At the same time, the management functioned as a broker for TransForum, stressing the importance of societal commitment towards the farmers.

Another example concerns the role of the farmers in the project. An assumption made in the beginning of the project was that business owners would have to do a large part of the investments. This implied that the plans would have to be developed for and with the business owners - the farmers. One of the first comments of the farmers, however, was that they are farmers, not designers or researchers. They were not interested in being involved in the design and development of the subprojects. The project managers therefore decided to form a design team without the farmers, but with several interaction moments with them. Again, for the progress of the project it was important that the project management was able to understand and empathise with the farmers, and not hold strictly to their routines of how a project is to be executed. In other words, they had to take the specific bounded community into account.

Hence, brokering involved translating between science and the farmers' reality (and between that reality and local policy). Applied research played an important role herein, as applied researchers (not only Pieter, but also others, e.g. an advisory service that was involved in calculating the energy plans) were better able to speak the language of the farmers. The project management developed a clear intermediate position between science and business, translating and mediating without bringing both systems together.

4.6.3 Making abstract concepts concrete

The project managers thus translated and mediated between different bounded communities. By keeping these communities relatively separate, they could all be addressed in their own language. This was specifically important with regards to the use of the abstract concepts of cradle-to-cradle and agropark. In order to make a connection between global sustainability ambitions and the everyday reality of the farmers, these concepts had to be translated into something that would fit their life worlds. At several occasions it became clear that working with abstract concepts was not useful for farmers. That already became clear during the first meeting with farmers. The project manager of Greenport Shanghai, one of TransForum's projects, presented the design for a large-scale agropark in China. The farmers commented that they are not living in China and that they do not have access to the directive style of the Chinese government. Hence, very important for making this project work on the ground, was to make the concepts work. The strategy used was to keep the concepts relatively undefined.

When the project started, there was no clear plan of what an agropark would entail. It was only clear that farmers would work together, integrating their businesses for reasons of efficiency and sustainability. At first the farmers were hindered by this lack of clarity, as they did not know what to expect from the project. They expressed their wish to get a better idea on the concept of agroparks several times; they wanted to work on something real and imaginable. However, the project management did not clearly define the concept. What happened was that the farmers gradually developed a shared understanding. The concept of agropark became a synonym to 'working together'. Their goal was not so much to develop an agropark, but to develop a strategy for a healthy future for agribusiness. As a result, the fact that the concept agropark was not defined 'from above' made it easier to respond to farmers. 'Agropark' could be interpreted as whatever suited best (of course within certain boundaries).

However, by keeping that process of developing a shared understanding implicit, the concepts were still available for parties with other ideas. For example, keeping the word agropark in place made it possible to attract finances from TransForum[7]. Also the local government was attracted by the use of the word; the concept had been picked up by many and was becoming a buzz-word. The label

[7] In fact, as TransForum wanted to develop the concept of agropark in a Dutch context, there was also space to keep it relatively open.

'agropark' therefore made the project more interesting, even though it was ill-defined, because it left room for fitting the concept to local strategies.

Interestingly, just as the concept agropark, also the addition 'cradle-to-cradle' was ill-defined. Official project plans hardly stated what it meant and there were no references to those who first coined the term. Moreover, the words cradle-to-cradle and sustainability were used interchangeably. The cradle-to-cradle aspect of the park was used to refer to closing residue cycles, but even this was hardly made explicit. The concept therefore remained vague, meaning sustainable, and thereby perceived as inherently good. This sustainability aspect was important for the development of the plan, because by framing it as sustainable, the project much better fitted the plans of local government. This increased chances for financing, not only because of the sustainability itself, but also because the sustainability aspects were seen to increase acceptance for agriculture in the area by society.

In short, the concepts agropark and cradle-to-cradle were kept vague so that they could mean different things to different bounded communities. Nevertheless, it was important to translate the concepts 'back' to where they originally came from. We conclude this from the reaction of TransForum to the C2C agropark project. TransForum argued that when compared to other agropark projects, the project in the Noordoostpolder seemed rather unambitious and not very innovative. But the reason for this was that the project focused on the perspectives of the farmers. It was therefore more realistic - less futuristic, so to speak - than many other TransForum projects. This caused tension between TransForum and the project management. TransForum did not see the direction in which the project was going as an agropark. The project management explained and defended the project approach in the final report of the project (De Wolf, 2010). The report argues that a farmers' perspective is important for innovation, as innovation needs real investments. A stepwise development, starting from the existing situation towards a specific direction, suits the investment planning of business owners well - at least much better than the much more ambitious plans of agroparks designed by scientists. Hence, rather than having a vision or a far-away plan, the direction of sustainability and closing cycles was chosen. The projects on the ground contributed to that direction. The project team therefore argued that what had been done was starting with the practical development of an agropark, but explaining this in TransForum's language.

4.7 The specifics of the context - conditions that made it work

In the previous section we theorised that certain interventions - most notably brokering and translating - have been successful mechanisms in making the project work. But this is not only due to the interventions themselves: every project that is situated in the real world has to deal with uncontrollable processes in the context. In other words, whether the mechanisms work depends on the specific context. In this section we focus on that context and analyse what local and regional characteristics were important for making the interventions work.

We recognise two main specifics of the local context that supported the interventions made. The first is the change dynamics in the region, in combination with the presence of a strong regional identity. Farmers wanted change and the agropark was the right project at the right time. The second specific concerns the large amount of strong connections between the project managers and the bounded communities, and within the community of farmers,[8] which can be seen as the potential for a strong local embeddedness. We discuss both specifics in more detail below.

[8] This seems obvious, as this is what (intuitively) influenced the project management to develop a strategy of brokering. Nevertheless, that strategy would not have been successful without people with large and varied networks that could take up the brokering positions, or without access to a strong farmers' network.

4.7.1 Change dynamics in a diversified area

As said, the Noordoostpolder is an agricultural area. Farmers are proud of their region and they are motivated to work on a vital agricultural sector. Most of the farmers realise that in order to stay in farming, things need to change. Not only do they face problems due to high energy prices and decreasing soil quality, they also face little support from the municipality, and fear and occasionally experience decreasing societal support for their activities. Furthermore, the farmers are proud of their innovative businesses and want to act as pioneers. Farming more sustainably and showing that is seen as a potential solution, not only to getting society back on board, but also regarding soil and energy problems. In other words, the farmers in this area were already looking for opportunities for the future. The project offered them a chance to work on such a future vision.

The idea of an agropark (in the sense of clustering businesses) was seen as an appropriate change, especially since the region is diversified agriculturally. The first farmers who participated in the project mostly grow flowers and bulbs. However, the region also knows arable farmers and dairy farmers. This is why the first group of farmers requested that farmers with other business types (but also from Ens) join. Increased diversity would enhance opportunities for the concept because of complementarity of businesses. Moreover, it would make clear whether other entrepreneurs also perceived an agropark as a promising concept.

That the region was looking for change and was receptive to ideas of clustering can be illustrated by the following example. The Young Entrepreneurs board of the local Rabobank organised 'PolderFutura 2042'. The aim of this event was to start a broad discussion on the future of the Noordoostpolder. One of the farmers in Ens was chairman of this board, and the event itself was chaired by Ino. Also various farmers, council members and aldermen were present, all related to the project. At the meeting, a contest was organised for the best idea for the future of the Noordoostpolder. The winning idea of that meeting was to develop the region as one big agro cluster (Ridder, 2009). A short investigation afterwards showed that the project had no explicit influence on this result. Hence, the idea of clustering agricultural and other functions was already part of the change dynamics of the region. The project had more or less linked up with these dynamics. Because it was during an event of the Rabobank - the bank of many Dutch farmers - that the idea of an agropark was chosen as most promising, can only have strengthened feelings of moving in the right direction.

To conclude, the area has a strong agricultural character and farmers are looking for possible changes so that it can stay that way. The farmers feel connected in this quest. Their connection is strengthened by the fact that the region has clear boundaries (recall Figure 3 and see Figure 5) which make it easy to define spatially. The existence of a regional identity that is bounded by the borders of the Noordoostpolder, based on agriculture and self-made by three generations of polder inhabitants can be illustrated with a final example. In one of the workshops organised, farmers developed future plans for the region. The plans developed show that the farmers indeed share an identity, which is connected to their region and to agriculture. During the workshop, the participants directly referred to the first design of the region in the late 1930s, saying 'let's redesign our area in a way that it will meet the future.' One group discussed the idea of a free state, where 'we could develop our region without influence from outside.'

Figure 5 *'Agriculture island', redesign of the region in a project workshop on 9 September 2010*

4.7.2 Potential for strong local embeddedness

Even though the project was set in Flevoland initially, which was soon specified as the Noordoostpolder only, the three themes developed were set mostly[9] around Ens. A reason for this was the bounded community of farmers in Ens; as explained before, some farmers from outside of Ens were excluded from the project (not always intentionally). As a result, the project developed a strong focus on Ens[10]. The strong regional focus of the project was due to the possibility to draw on existing relations; it would not have been possible without an initial stock of connections between people. In other words, there was a potential for embeddeness. The result of that embeddedness is that connections between people involved were easily made - brokers were present to cross the boundaries between bounded communities. There are two main examples of this, which will both be discussed.

I. Farmers organised against the municipality

It was relatively easy to get a group of farmers together, as they were already organised in the foundation 'Revitalising Horticultural Area Ens'. Moreover, Rien knew the chairman of the foundation personally. Consequently, because the farmers were organised and there was access to the chairman, it was possible to reach them.

The farmers did not only already know each other, but, more importantly, they were also working towards the same goal. They all had a history of expansion and had had to deal with the municipality regularly for legislative issues. In their struggle with the municipality, the project was seen as a strategic chance; the foundation would be able to use the project as a way to show that farmers were indeed working on sustainability, creating goodwill. Hence, having a common enemy had increased the farmers' internal trust, and the strategic position the project could have given them was an extra reason to participate.

[9] But not entirely; one farmer built a digester at his farm in Marknesse, and the logistic centre was to be built around Emmeloord.

[10] A little care is necessary here. Although on the one hand the focus around Ens was a result of the fact that most participating farmers were from Ens (so that the themes also ended up focusing on Ens), the focus on Ens was also a deliberate choice. Although they did not investigate other places in detail , the project management saw Ens as a promising area with chances for success. Starting in Ens was seen as a first step of a larger plan; for a first step it was crucial to start in a town with potential. Plans for the future were to develop the Noordoostpolder into one large agro cluster, or a cluster of clusters.

In addition to having a common enemy, Ens is close-knit community. There are numerous connections between people who are not connected to the farms. This will also have made it easier to get a group of people together and to get them to work on common themes.

II. Connections to local government
Because the project managers lived in the area, they had several connections to local government. Rien was the chairman of a political party and therefore knew several aldermen and politicians personally. Pieter's father-in-law was also a local politician and introduced him to again other politicians. Ino had a large network in the area, including in regional politics.

These connections were useful for the project in several ways. First, contributions were made to the election programmes of several political parties, stressing the importance of the sustainability issue and the support of businesses that have good plans, e.g. on sustainable energy production. After the elections, a coalition was formed of all parties whose programmes were influenced by the project managers. Second, one of Pieter's connections became the alderman for sustainability issues. The project managers had both formal and informal discussions with him to explore opportunities and check the support of the municipality. Finally, Ino organised a meeting with two officials on the spatial planning agenda. Input for this meeting was a document written by Pieter, in which he investigated potential developments for the horticultural area in Ens, including the development plans of the Agropark. The partners discussed a suitable location for a digester and spoke of expansion in areas not thought of before. As a direct result of this meeting, expansion plans were integrated in the spatial planning agenda, paving the way for new plans of the farmers.

Hence, the project managers had several personal connections to local government, which they used to influence policies. This was because the project managers were operating in the area in which they lived and had their personal networks. In fact, Rien had deliberately looked for a project manager from the area as he felt that it was important that the project management was familiar with the region and the farmers. He was not happy to work with the preferred partner of TransForum, as this institution was not located in the Noordoostpolder nor in any way related to the region. This lack of familiarity with the region can be seen as an argument used to include project managers with an understanding of farmers, rather than managers from the bounded community of TransForum; farmers and TransForum already had difficulties understanding each other.

4.8 Conclusions

The case of the cradle-to-cradle agropark shows a successful strategy to connect global ambitions to local realities. Because the Noordoostpolder consists of a diversity of specialised agricultural businesses, this opened up opportunities for cooperation and closing cycles. The concepts of cradle-to-cradle and agropark helped to identify and explore these opportunities, such as the use of organic waste and biomass for energy production for greenhouses, combined with compost production for soil quality improvement. Such ideas also matched the main challenges of the farmers involved, e.g. the high energy costs for greenhouses and the decreasing soil quality for outdoor crops.

Around the elections of 2010, sustainability was put on the agenda of the municipality rather strong. The project management supplied information and ideas for the election programmes of various political parties, linking them to regional energy production and closing waste and biomass cycles. After the elections, the project managers organised close interaction with the alderman on sustainability issues. This also created opportunities for the farmers' lobby to the municipality for business development possibilities, if the farmers include sustainability in their plans.

Different bounded communities were involved in the project. The project managers acted as brokers between them, enabled by their personal and professional networks within the communities. As brokers they translated between the communities and explained feedback in the discourses of the others. Keeping the cradle-to-cradle agropark concept relatively abstract was useful, as this made it possible to adjust it to the different discourses. That way all groups could relate to them, enhancing support for the project from all communities.

This strategy was possible because of the strong regional focus of the project, and the potential for local embeddedness due to the presence of bonds between farmers and between the project managers and others. In fact, the existing bonds were one of the reasons that the project became so regionally focussed. The strong regional identity present is related to a history that only goes back sixty years - or three generations of polder inhabitants. The project matched the feeling of being a self-built, mainly agricultural community that needs to organise its own future. That shared regional identity connected regional communities, overcoming short-term interests.

Getting the support of different regional communities for working towards a shared ambition shows the success of the chosen strategy. The project linked up with ongoing regional developments and strengthened them, e.g. through input in policy making and the initiation of spin-off projects in the area. The regional network that the project enhanced, is also still in place.

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5 Panoven: From brickyard to LEIsure company

Ronald de Graaff

5.1 Introduction

In this case study the driving forces of the transformation process are described and analysed from a family-owned brickyard to a LEIsure company, the Panoven, that participated actively in regional planning and recognises the importance of investing in the landscape. This chapter starts with a short introduction of the company and then describes the main events and breakthroughs in the last ten years in its development. Three main processes are distinguished that have a significant impact on the actions and decisions of the company. The chapter ends with conclusions.

Most of the information about the case has been gathered by personal conversations with the owner of the company. In the past four years the author has been involved as a researcher of Wageningen UR in an innovation programme from the Dutch government for stimulating innovation in the LEIsure business. The Panoven is one of the entrepreneurs who has received support from the innovation programme in the past four years.

5.2 From stone production to LEIsure services

This section the focuses on the development of the Panoven in the last 20 years.

The Panoven is a well-preserved industrial heritage site. It consists of a brick and tile oven from 1850 with a recreation reallocation. Until 1924 the oven produced four ceramic products: tiles, flagstones, bricks and drainage pipes. After 1924, the main product became bricks for private housing.

5.2.1 The family

Since 1921, the Panoven has been owned by a family with more than 300 years of tradition and knowledge of ceramics. In 1982, the oven went out of production and the current generation gives priority to the conservation of the heritage and transforming it into a LEIsure company.

5.2.2 Characteristics of the Panoven

A number of special elements on the terrain characterise the Panoven. It is the only round brick oven (so-called ‘zigzag oven’) in Europe and the only brickyard in the Netherlands where all the buildings and machines are in very good condition. But also it has a very unique archive with photos, books and films of the brick and tile sector. Another characteristic is the typical habitat that is in its original condition such as the dike, the course of the river Oude Rijn and the typical scenery. And with that it fits very well into a partnership with 12 other recreational businesses. Panoven is thus a well-preserved industrial heritage that has transformed to new economic activities in the LEIsure business and it has the ambition to become an estate in the near future.

5.2.3 Location

An important characteristic is Panoven’s location along the river and the clay soil. The course of the river has shaped the distinctive landscape. The result is a beautiful river landscape with tributaries, small islands, small puddles, inlets, swamps and flood plains, riparian forests and flowery meadows. It

is part of national park 'Gelderse Poort', an almost completely connected natural area of 20,000 ha. Also special is the area's proximity to Germany.

5.3 Analysis of important events and breakthroughs in the development of the Panoven

This section describe the important events and breakthroughs in the recent development of the Panoven for the last ten years. It is based on discussions with the owner and other relevant actors who are involved in this case.

At the beginning of 2000, the study 'Blauwe kruis, rode draad' (roughly translated as The Dutch River Delta) from the landscape historian Ferdinand van Hemmen was introduced for discussion in a meeting with the administrative board of the region of Arnhem and Nijmegen. This was to be an important turning point in the thinking of the owner of the Panoven about Panoven's position and future development. The study is about living and working in the River Delta since the middle ages and how the river and the inhabitants has shaped the landscape, on the one hand, by the natural course of the rivers and, on the other hand, by living with the rivers. The often silent witnesses of the struggle with the water tell much about the landscape and social life along the river. With this kind of knowledge about history, the landscape is coming to life.

> 'A very nice puddle is suddenly a brand that tells about the accident in a winter night upon the land. Then you realise what the consequences were for the people, lost homes, agricultural land unusable. In the landscape and on old maps, you discover what actions residents undertook with shovels and wheelbarrows to repair the damage.' (Ferdinand van Hemmen, 2000).

This study made the owner of the Panoven aware and acknowledge the business opportunities of the River Delta for tourists and LEIsure activities. But the owner also acknowledged that she could not do this on her own because it went beyond the property she has control over. For the development she was also dependent on other actors. She believed that she had to work together with other LEIsure businesses, also situated in the proximity of the River Delta and, together with these businesses, offer LEIsure and recreational activities along the River Delta to attract more visitors to the region. She also needed to work together with local and provincial authorities for investments in sufficient access to the area and investments to increase the quality of the landscape. For years the government had hardly invested in the landscape. And now, thanks to this study, they also became aware of the importance of the landscape for the cultural identity of the region. That is why the owner of the Panoven started to mobilise different stakeholders for the development of the River Delta. The owner became aware that she is dependent on other actors for developing her business in line with her ambitions. She started to organise meetings with potential partners like other LEIsure business, educational and health institutions and meetings with the local government.

Van Hemmen (2000) also attracted the attention from the city councils of Arnhem and Nijmegen, which helped increase awareness of the uniqueness of the River Delta. Also NGOs such as Gelders Landschap (provincial Foundation for the landscape) has nowadays special attention for the river landscape. From 2004, they have run a programme to develop the small lakes and the surrounding river landscape.

Thanks to this study, the owners of the Panoven became convinced that:

- the landscape that surrounds the Panoven and other recreational spots along the rivers is unique
- this unique feature can only be developed with other business partners
- investments will result in attractive experiences for tourists and recreational users.

An important event in 2001 was the founding of the Regional Tourism Office Arnhem Nijmegen (RBT-KAN). Based on the notion that the landscape is unique and that it must be used as a basis for the further recreational and tourism development, the owner of the Panoven and other recreation

entrepreneurs took the initiative, in coordination with the public management of the district, to form a new organisation in the field of recreation and tourism. In the region of Arnhem and Nijmegen, the forces were bundled to support the tourism industry. The public administration of the region (KAN), the Chamber of Commerce of Gelderland, and the tourism offices in the district have developed the ambition of the Regional Office of Tourism. This was done in close collaboration with the entrepreneurs. An action plan, prepared by the entrepreneurs and the public partners, led to a marketing plan for 2003-2005. This plan has served as a framework for the projects in the fields of marketing and promotion.

In 2004 there was a municipal reorganisation: Recreation and tourism became a priority on the political agenda. The area around the Panoven was less needed for other developments. This increased the opportunities for the owner of the Panoven to achieve her ambitions. Decisions on the local administrative level led through changes in the spatial planning which created opportunities for the Panoven to expand their business activities. These were changes in the zoning plans of the local government. It was not only the personal lobby of the owner of the Panoven, but more of that the influence of the Regional Office of Tourism and the public administration of the cities Arnhem and Nijmegen that causes a change in the spatial planning. They became aware of the importance and business opportunities of the River Delta for developing the LEIsure business and attracting more tourists. The Regional Office of Tourism and the public administration supports and stimulates the local government in making plans for developing the LEIsure and tourist business.

In 2006 the former Minister of the Dutch ministry of agriculture, food safety and nature management invited a number of innovative recreation entrepreneurs for a meeting about the long-term perspective of the sector at a national level. In this meeting, the Minister promised to facilitate the desired change under the condition that the entrepreneurs come up with a vision about the future of the sector.

It is not going well with the recreational sector: It is a disorganised industry with many small businesses and a poorly organised lobby at the national and provincial politics. There is low innovation, low margins and therefore limited access to external capital. Some advanced, large and small recreation businesses, including the owner of the Panoven, arranged a meeting with Minister Veerman about the future of the industry. The entrepreneurs emphasise the tight regulation in their eyes. But the entrepreneurs also stress that the unique landscape and history of the area is only marginally developed, but offers great potential and opportunities for economic development by attracting tourists and recreationists, but also opportunities to make the landscape more beautiful and to work together with the landowners. The Ministry of Agriculture is responsible for the landscape policy and former Minister Veerman feels responsible and he challenges the entrepreneurs to come up with a future vision for the sector.

In 2007, following the meeting with former Minister Veerman, the entrepreneurs came with the Manifesto of Hattum, in which they describe their view on the future of the industry. In line with this meeting the Ministry initiated the so-called Recreation innovation tables (to end in 2008). The owner of the Panoven is one of the authors of the Manifesto of Hattum. In this document, the vision of a number of Dutch pioneers of the recreation business on the future of the industry was revealed. The core of the Manifesto is that a strong recreation industry is possible and good for the Dutch society, because it goes along with caring for the environment, employment and economic development. The former Ministry of Agriculture is pleased with the Manifesto, and promised to facilitate further steps leading to change in the sector. This leads to the development of an innovation programme in accordance with the vision in the Manifesto. The owner of the Panoven actively participated in these meetings. The outcome of the innovation tables was a 2-year innovation programme and in 2009 the STIRR – the Foundation for Innovation in Recreation and Landscape – was established. The goal of this foundation was to coordinate the implementation of the innovation programme and to stimulate further innovation in the sector. The owner of the Panoven is a member of the foundation STIRR.

The former Ministry of Agriculture facilitated the development of the innovation programme Recreation and Environment (IPR&R) in 2008. In 2009 the innovation programme started. At the same time, the STIRR was set up to implement the programme. Also, STIRR won the contract to coordinate the

Regional Landscape Stories programme. In October 2008, the Action Plan Regional Landscape Stories was presented to the Minister of Agriculture. The Dutch River Delta is one of the partnership initiatives with ten participating recreation entrepreneurs. The owner of the Panoven gave a presentation of the partnership 'The Dutch River Delta', which is one of the regional landscape stories. The owner of the Panoven initiated this partnership by organising meetings with other LEIsure businesses that are located along the River Delta.

As a means to stimulate innovation by small business firms in the field of recreation, the Ministry of Agriculture started a so-called SBIR-tender in 2010. The SBIR (Small Business Innovation Regulation) is meant as a mechanism to simulate innovation. The SBIR gives financial support for writing a marketing plan and for the product development.

The alderman of the village of Zevenaar congratulated the Panoven with the SBIR grant and requested an inspiration document. In the first three months, the Panoven made contacts with governments, businesses and others involved in the Dutch River Delta. In March 2010 the Panoven presented the inspiration document of the Dutch River Delta to the alderman and organised the Inspiration Tour Luctor et Emergo. The Dutch River Delta organisation also finished the action plan and received funding from the province for further development.

The role of the Foundation Innovation, Recreation and Environment (STIRR) was coaching and supporting the owner of the Panoven in the various projects in which the Panoven participates, by being a sparring partner when preparing meetings, making presentation sheets, and helping to write grant applications. The coaching was done by researchers from Wageningen University, who not only did research but also carried out traditional consulting tasks.

5.4 Three main processes

In the analysis of the Panoven we distinguish three main processes that influence the actions of the Panoven and the deliberate and accidental consequences of these actions:

- The relation between the area, the family and the urge to continue the business on that spot.
- The focus on developing relations with other parties and social systems.
- Mobilising investments and influence with a long-term perspective.

5.4.1 Area, family and the urge for continuity

A main characteristic of the Panoven is that it is a family business that has been located on the same spot for several generations. Consequently, the family has a very strong commitment, which also has to do with the very localised nature of the business. The supply of the material for the production of bricks and then transporting them over water, makes the location near the river necessary. Nowadays, the Panoven is the only remaining panoven which is completely intact. Now it is recognised as an industrial heritage. It hasn't been in use as a working Panoven for about 30 years now, but the transformation to a recreation business has been an ongoing process since then.

The goal of the transformation is to create a future business that is long lasting so ownership of the family can be retained. There is a very strong emotional and social bond between the family and area and the business and with that a strong motivation to make it economically viable for the future generation of the family. The size of the parcel, its location on the outskirts of the town of Zevenaar near the cities of Arnhem and Nijmegen and the belief of the family that a recreation business would offer future possibilities, is the reason this direction was chosen.

The core of the transformation is the strong conviction that the business must be preserved by the family. Consequently, the family is making choices and acting with a long-term perspective. Simultaneously, the bond with the area is going back several generations, the family is proud of the area and recognises its beauty. They do not just want to preserve the business, but want to develop the business in together with the maintenance and development of the surrounding area. The

combination of the three interrelated features is a driving factor in the actions of the owners and influences the conscious and unconscious choices they make. These features are:

- an emotional and social bonding with the place,
- the urge for continuity,
- the connection between the development of the business and the nature of the area.

5.4.2 Bonds within the business branch

This section describes the search of the Panoven to form alliances with parties within different social systems. The Panoven sees the importance of looking beyond just their own business. The very search for alliances with other parties, but also the organisation of interests at the level of the recreation business and thus connecting to and present in other social systems, is an important second main process that controls the actions of the Panoven. The Panoven developed alliances within the recreation business but is also searching for business alliances outside the sector, for instance cooperation with a Dutch healthcare organisation. Clients can work on a therapeutic basis on the Panoven under the supervision of the healthcare organisation. Also, cooperation with schools enables students to carry out gardening chores. There is also cooperation on a regional level with other recreation businesses for establishing the Regional Tourism Office to look after the common interests of recreation / tourism businesses at the political-administrative level. And cooperation on the national level with like-minded innovative entrepreneurs to influence national policy on recreation and tourism.

These four examples of how the Panoven has established connections with different social systems because of common interests, is a process of association. It is part of the transformation process from doing business in the brickyard sector to become successful as an innovative LEIsure company. This change of industry is a major transformation, and should not be lightly thought of. It demands a new way of doing business with other kinds of competences and capabilities and within other networks. The Panoven now participates in social systems at different levels: family, municipal, regional, sectoral, national. The Panoven now also faces a much more complex network of stakeholders. The owner of the Panoven has to deal with spatial planning policy in expanding and changing her business into a LEIsure company. The owner has to develop capabilities to cooperate with other LEIsure businesses and to participate in a network of private and public actors.

5.4.3 Mobilising investments and influence

The ambition of the Panoven requires investments that go beyond their own financial capabilities, so it is necessary to look for external sources of funding. Last year the Panoven succeeded in acquiring an innovation subsidy for the development of the business. They received two kinds of subsidies from the government, for the company itself and for the organisation of the Dutch River Delta. The coaching and support from the STIRR organisation was crucial to obtaining the grants. The STIRR consultant, who is a researcher of Wageningen UR, contributed to writing the application form for the grant. And of equal importance was the role of the consultant as a sparring partner in the preparation of meetings. It helped the owner of the Panoven to see things in another perspective and to structure her thoughts. The owner of the Panoven is focused on her own company. The consultant helps the owner to see her plans through the eyes of other stakeholders such as the municipality. How are the plans of the owner related to the policy priorities of the municipality? This kind of support for entrepreneurs is often overlooked, but this case shows that it is often very important for the development of entrepreneurs and their businesses. It supports the growth of the entrepreneur. The STIRR consultant is also a linking pin with other social systems where the Panoven only participated marginally or not at all. It gives the Panoven acces to knowledge, influence and finance. For instance the consultant has organised a meeting with the deputy of the province Gelderland and the business that takes the initiative of the Dutch River Delta to discuss their plans.

Another side of participating in different social systems is that it can act as a means of mobilising influence. Some years ago the Panoven had a difficult relation with the municipality Zevenaar and the municipal officials, because the municipality was against the LEIsure company Panoven. The Panoven wanted to expand its business, but the city did not want to cooperate. One of the actions of STIRR was to organise a meeting with the alderman and his officials of Zevenaar and the alderman of

another municipality that cooperates with entrepreneurs that have similar plans as the Panoven. This started as an exchange of experiences and possible solutions. The Panoven nowadays participates in a number of networks, such as the organisation 'Dutch River Delta', the provincial government, and the Ministry of Agriculture, which also supports the Panoven with a subsidy. And with that, the position of the Panoven has changed. The alderman of the municipality of Zevenaar now accepts the Panoven as an innovative and valuable LEIsure company. The participation of the Panoven in several social systems has changed the relation with the municipality in a positive way.

It was very important for the development of the company to connect with the policy priorities at different levels. At the local policy level the connection is important because of getting approval for expansion plans. The officials of the municipality must understand and approve the plans of the Panoven and therefore they must fit in the planning policy of the municipality. In the discussion and for the relation with the municipality it is important for the Panoven to have support from the province government. To get the support from the province, the Panoven plans must fit in the province's policy. STIRR then organised a consultation with the deputy of the Province of Gelderland to discuss the plans. Ultimately, this resulted in a grant for the Panoven to support the organisation of the Dutch River Delta. The Panoven also received a grant from a national innovation programme. The plans of the Panoven fit into the national policy on the combination of LEIsure and developing nature and landscape.

5.5 Conclusions

Three main processes are crucial to the development of the Panoven. The overall process is a transformation process of more than twenty years of a company making money in the brick and tiles sector to a very different way of doing business as a LEIsure company. A family-owned company going back several generations is of utmost importance for the motivation to successfully transform the company into a future-proof business. With a long-term perspective, the Panoven struggled successfully the past twenty years to survive as a LEIsure company. Participation in different social systems resulted in recognition and appreciation of the company in both the LEIsure sector and at different levels of government. But it also gives the Panoven access to knowledge, influence and finance opportunities. The coaching and support from STIRR on a micro level of the Panoven was very valuable in the development of the company.

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6 Supporting a regional transition, the Echt Overijssel! case

Ina (J.B.) Pinxterhuis and Francisca (J.F.) Caron-Flinterman

6.1 Project description Echt Overijssel!

The project Echt Overijssel! (Truly Overijssel!; 2009-2013) aims to meet regional challenges for agriculture and nature conservation by designing and implementing new collaboration concepts and alternative product chains in agriculture. These concepts of regional agriculture strive for the integration of biodiversity and closed nutrient cycles within agricultural systems in a profitable way. In order to achieve this, Echt Overijssel! creates room for experimentation that entails both individual farming strategies and new forms of land use and co-operation, with active involvement of farmers and nature conservation organisations.

For example, areas with nature conservation demands may serve as an additional source for agricultural production, demanding new ways of co-operation between farmers and nature conservation organisations, while guaranteeing the preservation of biodiversity values in these areas. At the same time, exchange of production resources (animal feed, manure) amongst specialised farms contributes to closing nutrient cycles at a regional level. These strategies can be supported by improving the market value of products from these farms by product and market development, thus enhancing their economic viability.

The project takes place in the Dutch Province of Overijssel. Agriculture plays an important role in the landscape of Overijssel, accounting for more than 70% of the land use (Table 5). In Overijssel, agriculture faces the transition from an orientation on production efficiency towards an orientation on sustainability, comprising a broader range of goals, such as biodiversity, environmental protection, animal welfare, meeting societal needs (e.g. recreational functions), local product chains, etc. The claims on land use are diverse (see for example PBL, 2010) and puts pressure on the area used by agriculture. This is visible by the continuing decrease in land use by agriculture: in the period 1996-2006 agricultural land decreased by 4,500 ha in Overijssel (CBS, 2010).

Table 5
Land use in Overijssel in 2006 (CBS, 2010)

Total area (ha)	342,086	% of land	Average NL
Traffic infrastructure	10.219	3%	3%
Urban area	24.273	7%	10%
Other build areas	3.172	1%	2%
Recreational infrastructure	6.867	2%	3%
Agricultural land	241.525	73%	68%
Forest and nature reserves	46.463	14%	14%
Inland waters	9.568		

In this regional context, three different challenges meet each other:

1. Agricultural entrepreneurs need innovation in order to keep their businesses economically and ecologically viable.
2. Nature conservation organisations own and manage large nature reserves and need affordable ways to meet their biodiversity goals.
3. The organic agricultural sector aims to close nutrient cycles on a regional scale, for which a balance between livestock and arable production and production of animal feed in the vicinity of

livestock farms is required. This involves new collaboration between agricultural sectors since in The Netherlands organic farms are strongly specialised (De Wit and Verhoog, 2007).

ad. 1) The general trend in the Netherlands is a decrease in number of farms, while farm size increases (see e.g. LEI and CBS, 2010). Also in Overijssel the number of farms decreases and farm size increases. For example, the number of dairy farms decreased from 7,060 in 1995 to 4,418 in 2004, while the milk production increased from 281,904 to 412,565 kg milk per farm in the same period. This was produced by 46 cows per farm in 1995 and 60 cows per farm in 2004, hence also the production per cow increased (Beldman *et al.*, 2006). Due to low prices, the income of the agricultural sector was historically low in 2009, especially for glass house gardeners and dairy farmers (De Bont *et al.*, 2010). Apart from facing income pressure, the Dutch livestock production faces still a tremendous task to decrease its environmental impact, i.e. nitrate leaching or emissions of ammonia or greenhouse gasses (e.g. Vellinga *et al.*, 2010).

One way to increase farm profitability is to extend the on-farm activities. The number of farms with multifunctional activities is increasing in the Netherlands (CBS, 2009). However, in Overijssel the number has decreased in the last year. In Overijssel 1,544 farms were active in multifunctional agriculture (health care, farm sales, processing, agricultural nature and landscape management or recreation and tourism) in 2005. In 2009 this number had decreased to 920, involving reductions within all sectors apart from health care. No published reports were found on why this decline happened in Overijssel. However, the economic return from these activities in Overijssel increased in this period from 23 million to 28.7 million euros (Roest and Schouten, 2010).

ad. 2) The provincial governments of the Netherlands seek to establish an Ecological Main Structure (nature reserves) by 2018, which requires land purchases and contracts with farmers to manage nature and landscape (LNV, 2009 and PBM, 2008). The provincial government of Overijssel aims to increase the land use for the Ecological Main Structure by another 12,693 ha in Overijssel before 2018 (reference date 1 January 2007) of which 1,768 ha was realised by 1 January 2010 (Provincie Overijssel, 2010). Additionally, the province aims to increase the area of agricultural land with subsidised agri-environment schemes to support biodiversity. In 2010 this comprised over 5,000 hectares (Provincie Overijssel, 2010). The combination of a growing area of nature to manage and increasing operational costs puts pressure on the nature conservation organisations (mentioned in among others Interprovinciaal Overleg and LNV, 2010).

ad. 3) The organic agricultural sector in the Netherlands aims to reduce its dependence on inputs from conventional agriculture (e.g. manure and some feedstuffs, Skal, 2010) and from other countries (mainly feedstuffs; e.g. Jansen, 2009). Bos *et al.* (2005) pointed out that only approximately 15% of the total requirement of feedstuffs for Dutch organic livestock production was produced in the Netherlands itself. A study on the origins of the products used in concentrates for the experimental organic dairy and pig farms of Wageningen UR, showed 35% of the ingredients of concentrates for the organic dairy farm came from The Netherlands, for the organic pig farm this was only 5% (Pinxterhuis *et al.*, 2009).

The project aims to reconcile these three challenges within the context of the Province of Overijssel. The project initiators assumed that this implied a regional transition with changes in individual farming systems as well as establishment of new regional co-operation forms. This would involve changing choices of farmers, and development of working relations between employees of nature conservation organisations and farmers. Hence the project was designed to facilitate the transition processes in livestock and arable farming, towards new forms of collaboration within the region.

6.2 Activities and results 2007-mid 2011

6.2.1 The initiation

Echt Overijssel! was initiated by Vereniging Natuurmonumenten (the Dutch society for nature conservation), Stichting Dianthus (a co-operation of agricultural entrepreneurs that produce regional

products), and Wageningen UR Livestock Research (a research institute involved in, amongst others animal sciences and innovation processes in livestock production). In 2007 and 2008 the project was set up by three representatives of these project partners (non-farmers), with background support from a few local farmers who represented Dianthus and the organic agricultural sector. Seeking project finance was a long process and involved provincial and national governing bodies and the organic knowledge network Bioconnect, the latter in charge of research for organic farming. In the winter of 2008/2009 the project was communicated externally and participants were recruited. In the summer of 2009, the execution of the project started. The project is financed by the Province Overijssel; the Ministry of Housing, Spatial Planning and the Environment; and the Ministry of Agriculture, Nature, and Food (via Bioconnect).

Examples of transition to more regional forms of agriculture were sparse. Local initiatives were sought from regional media sources and interviews were conducted to establish whether these initiatives were supporting the transition the project aimed for. An inventory of national and regional papers or farmers' magazines was conducted using LexusNexis software, to check which terms were used in the media. The number of times the Dutch terms for 'regional agriculture' or 'cyclical agriculture' (terms adopted by the project) were used was low (Table 6). Nutrient cycles in agriculture were more often mentioned. This was often mentioned in relation to organic farming, phosphorus use, energy use, or in the later years in relation to food crises. Articles on regional products were more common, increasing in frequency from 2007 onwards. Interviews with producers of regional products revealed that these products were not necessarily linked to forms of agriculture supporting use of regional sources or supporting local biodiversity, hence the project team did not want to adopt this term to reflect its goals.

Nature conservation in relation to agriculture was mentioned far more often in these media. However, this term was not adopted either, because it did not cover the project goals and was actually decreasing in popularity with the farming community because of increasing costs and lack of sufficient subsidies.

Table 6

Frequency of use of specified terms using a Lexis Nexis inventory of 117 Dutch national and regional publications, 2005 to 2009.

	2005	2006	2007	2008	2009
'Regional agriculture'	2	5	5	8[1]	4
'Cyclic agriculture'	0	0	0	0	4
'Cycle' and 'Agriculture'	21	13	21	33	45
'Agriculture' and 'Regional products'	63	74	161	144	126
'Agricultural nature management'	425	306	384	307	292

[1] The media picked up that a book was published on regional agriculture (Donkers and Immink, 2008).

6.2.2 Getting the project started, 2007-2009

The project Echt Overijssel! was preceded by a long trajectory to establish the goals, methodology or project structure and to obtain sufficient funding. In 2006 ideas to start a project on closing nutrient cycles were put forward to the organic sector by the farm manager of an experimental farm for organic dairy production, and budget was made available to make a start in 2007. Since the Province of Overijssel was asking for similar research topics to be put forwards, and the research farm involved in the development of the project was situated in Overijssel, the initial project team decided to aim for a large regional project. Soon Natuurmonumenten and Dianthus came on board, with their ideas to link high nature value grain cropping to organic animal production.

Developing the project, building a network and lobbying for support resulted in a lot of positive energy for the people involved. Feedback was positive, from stakeholders as well as the potential financier

Province of Overijssel. So initially, confidence in a quick start was high. However, due to a lot of setbacks around the financial construction of the project, with uncertainties around EU funding and funds from the province, the majority of the budget from the organic sector was needed to continue to develop the project and rewrite the proposal several times. A careful start was made with the high nature value grain cropping with Natuurmonumenten, even though the full project was not funded yet. These first steps appeared to be crucial to maintain confidence within the project team that the complete project would start eventually, but the co-financiers of the organic sector were less content, not seeing much progress around nutrient cycling. This resulted in less co-funding from this party in later years.

In October 2008 the province decided to fund part of the project pending the funds becoming available through EU. This was the signal for the project team to start recruiting participants in the agricultural sector as well as facilitators for the proposed learning networks. The project participants were recruited with a promotion campaign at the end of 2008 and early 2009. Also several farmers involved in the early stages asked potential participants to join. At the start of the project 27 people joined, see Box 1.

Box 1. Participants of Echt Overijssel!: group structure and motivations

The group structure of the participants at the start of the project was as follows: 9 dairy farmers, 2 with beef cattle, 2 with pigs, 1 with poultry, 1 with dairy goats, 1 with buffalo, 3 with crops and 3 mixed farms. Of these, 15 farms were organic, 10 were involved with activities aimed at civilians, and 5 included nature conservation management. Besides farmers, one civilian couple with an interest in nature conservation and/or regional sustainability joined, as well as 2 feed suppliers and 2 contractors.
Entrance interviews were conducted, using an extensive list of questions covering farm set-up, farmer motivation, economics, awareness of biodiversity, nutrient management, short and long term goals and reasons for participating in the project. The interviews revealed individual aims of these participants were diverse. Most often, learning was mentioned (12x), followed by working towards more connection with society (11x) and improving farm economics (11x). Networking was mentioned 8 times, searching for opportunities to use more land 6 times. Less often, the following aspects were mentioned: self sufficiency for roughage (4x), regional sourcing and marketing (4x), more nature or biodiversity (3x), increasing sustainability (3x), self sufficiency in general (1x), energy production (2x) or development of new products (1x).

6.2.3 The project structure

In the pre-project phase, from 2007 to 2009, the project goals were formulated by representatives of the initiators and financiers. To include other relevant issues and a broader set of experiences in the project, various stakeholders were interviewed. Project participants were interviewed during the recruitment period. Furthermore the first months of the project were used to explore the more immediate needs of the participants and to fill in their agenda for the learning networks.

The project structure is given in Table 7. The project was structured around three learning networks: groups of participants working on one main topic. Each network had a facilitator. Across the three networks, the project team defined four sets of activities that needed input from all three networks:
1. Interactive design - designing forms of collaborations to achieve the project goals
2. Biodiversity - addressing biodiversity in agriculture
3. M&E - monitoring and evaluating the processes in the project and its progress
4. Communication - communicating project activities and results

These sets of activities were also assigned a facilitator each, to have a dedicated and competent person for these activities and to make sure they would be addressed sufficiently throughout the project.

Table 7

Echt Overijssel! project structure; number of participants at the start of the project, these numbers varied during the course of the project.

Project team		1 representative of Dianthus
		1 representative of Natuurmonumenten (NM)
		Project leader, Wageningen Livestock Research
Networks	Animal Feed	10 participants, 1 facilitator
	Cropping	5 participants + NM, 1 facilitator and 1 researcher
	Market	6 participants + Dianthus, 1 facilitator
Plenary activities	Design	1 researcher
	Biodiversity	1 researcher
	Process monitoring and evaluation	2 researchers
	Communication	1 facilitator

The three networks each focused on a different aspect of regional agriculture:

1. Animal Feed network - animal feed and nutrient cycles
2. Cropping network - integrating biodiversity in cropping
3. Market network - product-market concepts

While the project leader preferred an open approach and leaving the participants to decide on topics for the project, the two other team members felt the topics to address were clear: the first being the focus for the organic animal production sector, the second being the focus of Natuurmonumenten and the third being the focus of Dianthus. They felt setting the topics right from the start would speed up the processes. For the same reason, participants (farmers and other (agricultural) entrepreneurs) were allocated to these networks before the first meeting, on the basis of their own main interests as expressed during the entrance interviews. The project team had previously discussed whether to divide the participants in regional groups, each addressing all project goals, or using thematic groups. The latter was chosen, because the location of the participants was not such that three regional groups could be set up. Also, thematic groups were seen to better address the individual goals of the farmers, and as a methodology being closer to their previous experiences.

Because the project started much later than anticipated, the initially proposed network facilitators were not available anymore. This meant new facilitators had to be recruited. They were new to the concept of the project and its goals when the project started, so at the time they were starting with their networks, they themselves were learning about the project goals and anticipated methodology.

In order to ensure that activities within the networks addressed the main goals of the project and provided building blocks for the overall concept of regional agriculture, network goals needed to be aligned with, or tested against, the overarching goals of the project. To facilitate this, the project team prepared a document to outline the expectations the project team had of the farmers' participation and what farmers could expect from the project. Results from the interviews of the participants were used to formulate the expectations, alongside the project goals. This document also outlined the project goal of developing regional co-operations between farmers, nature conservation organisations and buyers (traders, industrial processors or consumers) to improve nutrient cycling and incorporating nature conservation goals in their business, within a profitable business concept. The document also outlined the farmers needed to define their network and individual goals as a first step of their networks. Furthermore, the document contained the agreement with the province to deliver an increase of the on-farm use of biodiversity and local feed or manure sources. The document was shared with the participants; it was not presented as a formal contract, farmers did not sign up but were free to move within the project or leave if they would feel the project would not be of any benefit to them.

6.3 Activities in the three networks

In June 2009 participants met each other for the first time in a start-up meeting, involving all participants and facilitators. In this meeting the framework of the project was explained, and participants were shown to which network they were assigned on the basis of the interviews, stressing that they could move to another network if they wanted to. Mutual expectations were exchanged and discussed and the three networks made a start setting up their working plans.

Since then, the three networks sharpened their various goals and defined activities to work towards these goals, each following their own dynamics. In September 2009 each network was able to formulate shared goals (Box 2).

Box 2. Goals of the three networks in Echt Overijssel!, September 2009

Animal Feed network:
- Efficient production on own land (grass/clover, herbal mixes, crop rotation)
- Contributing to the closing of nutrient cycles by enhancing the regional production of animal feed
- Use of biomass for energy production

Cropping network:
- Identification of options for profitable wheat production combined with nature values
- Mutual understanding between nature conservation organisations and farmers around choices for wheat production with nature values
- Optimizing the crop rotation including wheat from participating enterprises

Market network:
- More concrete and recognizable products and services with surplus value from the regions
- Recognizable own identity for products and services from the region
- Development and implementation of a common market approach

6.3.1 Activities of the Animal Feed network

Several participants of the Animal Feed network mentioned already in the first meeting that they would not be able to meet often, many being busy with on-farm building and expanding activities. This meant the development of the action plan for the first year was less interactive than desirable, with a varying, but low number of farmers actively contributing.

The farm-expanding activities of the majority of the participants of this network were having a negative effect on the project. These expanding activities were initiated after the high commodity prices in 2007. With lower prices in the following years, these farmers probably experienced an income squeeze. Some stated explicitly that they only were prepared to put time and effort in collaborative processes when they felt these processes would contribute to generating extra income on the short term.

However, all participants agreed on the action plan and preparations started by researchers to set up a grassland mixture demonstration for improved production. Also, the facilitator tried to invite representatives from nature conservations organisations to discuss possibilities for the participating farmers to manage nature conservation areas. However, every single one declined, with feedback given that no land would be available for agricultural use or that they had enough contacts to manage the areas. This resulted in the group asking the project team to come up with a plan to get the nature conservation organisations more involved. The project team took this up by organising a plenary meeting on land use (the third meeting in the Backcasting route, see above). As mentioned before, this resulted again in disappointment when this meeting was cancelled. At a later stage in the project

some participants conceded they expected the project team to have organised nature conservation land to be managed by the participants before the project started. They had hoped that merely enrolling in the project would be sufficient to achieve increase in acreage. These expectations were not made clear at the onset of the project, so the project team or facilitators had not been able to address this appropriately. According to some farmers, the initial facilitator had raised expectations that the project team would actively search for land, even though in the meetings between project team and facilitators it had been made clear that this was not the case. Obviously communication lines were not open enough to prevent differing expectations.

Within this network the lack of enthusiasm and ability or willingness to invest time and effort in the project also became apparent when the participants of this network were asked to host the grassland mixture demonstrations. Only one participant responded positively. So only one location was sown early 2010. This location was used for discussions on targeted use of grassland species and cultivars throughout 2010 and 2011.

It also appeared difficult to address the goal of further closing nutrient cycles within the region. The group was not able to define actions or set research questions, beyond the one put forward to the project team asking for more involvement of nature conservation organisations. Co-operation with arable farmers was not seen as a possibility, there being too few in Overijssel. Also, at a later stage in the project participants made it clear they preferred to manage the crops themselves to avoid having to communicate and collaborate with another farmer. This was perceived to be difficult, with some farmers having had experiences where expectations were not met or agreements had been cancelled. To overcome this lack of action the project team organised a plenary meeting on nutrient cycling to define an action plan (see Forecasting, above).

A setback for this network was the withdrawal of the participating experimental farms of Wageningen UR Livestock Research, because this organisation decided to sell these farms. Their participation was seen as a commitment of this organisation to initiate and implement a regional co-operation. Also their profile in the region was seen as a great benefit to communicate the goals and achieve participation of other local parties.

Another factor affecting the Animal Feed network negatively was the inconsistent facilitation of the network. Within half a year this network had their third facilitator. Expectations were not met and there was no continuity in the further development and implementation of the action plan. With their third faciliator the participants agreed on monthly meetings in the autumn and winter, each covering a specific topic mentioned in the action plan. However, this was not action oriented anymore as envisaged by the project set up. A few participants decided to also attend the meetings of the Cropping network and engaged in the activities of this network. Participants of the Cropping and Market network were also invited to the thematic meetings of the Animal Feed network, and some did attend.

6.3.2 Activities of the Cropping network

The Cropping network had a head start with the participation of Natuurmonumenten with their high nature value cropping experiments. Researchers had already been involved with this for two years and the participants were immediately introduced to the goals and methods used to develop this type of cropping. The group discussed the results and coached by the facilitator and researchers the participants chose their own experiments. Enthusiasm was great in this group and in autumn 2009 the first new experiments were sown. Further meetings were held at the locations of the experiments. Also some participants of the Animal Feed network joined in. Already in 2010 other farmers asked if they could partake in the experiments. They were invited to attend a few meetings to see if they fitted in the group and whether they would participate in the experiments. The Cropping network had a few difficulties with Dianthus. Initially, the project team had expected the Dianthus members would partake in the network and would embrace the goal of high nature value grain cropping. However, only a few members of the Dianthus grain cropping group enrolled for this network and declined within half a year. Not one participated in the experiments. The Dianthus group focused on the marketing and aimed for a higher yielding cropping system. This did not meet the requirements from

Natuurmonumenten or the network goals. The network participants wanted to address biodiversity, and make that a leading goal of the network. Also, despite Dianthus communicating the members were producing without chemicals, a considerable number of Dianthus members appeared not to follow this through, nor think an organic approach was important. This frustrated the network participants, as well as the continuing negative feedback from Dianthus members and the representative of Dianthus in the project team, who was disappointed the network took another route. Despite several attempts by the project team, a merger between the two groups appeared impossible. In 2010 the management of the high nature value grain fields of Natuurmonumenten was handed over to two participants of the network. This was an important milestone for the Cropping network. Another milestone was the development of a new local product, a biscuit made from the grains from the high nature fields. This was marketed with backing of Natuurmonumenten, clearly presenting the co-operation between nature conservationist, farmer and baker. The cookie was introduced together with a cycling route, showing cyclists the fields and other local places of interest.

6.3.3 Activities of the Market network

The Animal Feed network and the Cropping network chose to meet on farms or business locations of the participants. In these networks each meeting ended with an excursion on site. This seemed to improve the social cohesion and understanding of each other's background at the start of the project, with informal meetings and friendly discussions. In these networks it seemed relatively easy to define goals and actions for the next two years. However, once ideas for experiments or activities were put into practice, it seemed researchers had the lead.

In the Market network, this form of socialising was not facilitated, and meetings took the shape of regular business meetings the facilitator was familiar with. This network also had the greatest variety of participants. Finding common ground was most difficult in this group, and several times discussions ended in arguments. After half a year of discussing the action plan, the network decided to help one of the participants to set up a local chain producing and selling beef from an extensive, nature conserving and organic production system. From this they all would learn and gradually more producers and products could be added.

The group got negative feedback from the representative of Dianthus, who felt they were repeating too many steps Dianthus already took before them. Several arguments resulted in the group loosing faith in Dianthus, unwilling to become part of that foundation. The group wanted to start fresh and on their own. To implement this, they set up a foundation with a name showing their intention: Nature Farmers from the Neighbourhood. Within a year and a half they executed a successful pilot selling their own brand of beef in a local supermarket. They had found a trader and local supermarket, willing to participate and be part of the experiment, i.e. each covering costs and risks of their own part of the chain. Furthermore, participants presented themselves on local markets, on the internet and in local media. This gained interest of nature conservation organisations and the provincial government. Also other farmers started inquiring how they might participate. In the meantime, the group had to overcome different opinions within the group and some negative feelings about one farmer being supported, while others still had to wait before it was their turn.

Other actions of the group were developing a local solar energy initiative, cycling routes covering the participating farmers, and monitoring biodiversity on the participating farms. All initiatives were chaired by one participant and involved local volunteer groups.

Biodiversity was taken up by the group by a screening of the flora and fauna diversity on the participating farms, used for profiles of the farms on their website (story telling) and developing action plans per farm. This functioned as a pilot for a methodology to be used for all participants of Echt Overijssel!

All initiatives were financially supported by the project Echt Overijssel!, biodiversity being the only one initiated by the project team.

6.4 Activities on project level

6.4.1 Interactive design

Before the participants were recruited, the design process entailed the formulation of the three main goals of the project (improved biodiversity, closing of nutrient cycles, and new product market combinations to make these first goals economically feasible) based on regional challenges, demands, visions, and earlier experiences. This step was executed in the pre-project phase with representatives of the initiators and financiers. To include other relevant issues and a broader set of experiences in the project, various stakeholders and the project participants were interviewed.

The three main goals were the basis of the learning networks, with the project team envisaging the Animal Feed network to address closing of nutrient cycles, the Cropping network addressing biodiversity in arable systems and the Market network developing new product market combinations.

The design process became more interactive when participants became involved and plenary meetings were organised by the facilitator of the design process in conjunction with the project team and other facilitators. All participants (all three networks) were invited to the plenary meetings, to enable the establishment of a common view and connections between networks.

The first plenary meeting took place in September 2009. This meeting introduced biodiversity and how to utilise biodiversity in agricultural practice. The aim was to create consciousness amongst all participants on the importance of biodiversity and on challenges and opportunities involved, as a first necessary step in the development of a common vision. This was achieved, but in a different way than envisaged (Box 3).

Box 3. Interactive design: the first plenary meeting

September 2009 the first plenary meeting with an element of vision development took place. While the first part of the meeting would be aimed at sharing the network goals and planned activities, the remaining time would be used to discuss biodiversity. The aim was to explore with the participants what biodiversity means in their own agricultural context. It was envisaged to introduce the concept of biodiversity in agriculture, followed by an interactive session defining opportunities or bottlenecks. Suggestions from project team members were followed up, incorporating in the programme an excursion on the location of the day, an expert to introduce the topic biodiversity, an innovative farmer who encorporated biodiversity in his farm system, and an overview of biodiversity on the farms of the participants. Juggling the different needs of the project team members meant the programme was full, resulting in a meeting where time for discussion was short. Also, at the end of the full day, not many participants appeared to have an appetite for discussion. Questions by the facilitator were not answered. Instead project team members started to answer questions, making it even less necessary for the participants to get involved.
It was agreed on that the theme biodiversity would be incorporated in the action plans of the three networks. Participants learned a lot about biodiversity within agriculture, they got to know each other better and were updated on what was happening within the groups. Also topics for future sessions were identified. But instead of an active day, the day was a passive and consumptive day. Evaluation of the day in the networks also showed that participants were not content with this day. Some explained they thought researchers and facilitators would tell them which questions needed to be answered and how the participants were going to act on this. They expected a far more prescriptive approach. Other participants thought the ideas presented were far from practical and would not fit within economically viable enterprises, alienating them from the overall project goals.

The approach taken by the project team to further introduce the topic biodiversity and develop a vision on how biodiversity and agriculture could be combined in the region, was to execute an

inventory of existing biodiversity on the participating farms, followed by developing individual action plans to improve on-farm biodiversity. This approach, however, had a difficult start due to a rapid succession of people facilitating this topic. While the first moved on to other work, the second did not achieve a connection with the participants, them asking for another approach and another person. The third leader of the topic biodiversity fared better. He could connect to the goals of the already active networks.

The second plenary meeting, in December 2009, was organised by the Market network. Its aim was to develop shared ideas about how to market local food products. Having learned from the first meeting, only Dianthus presented its ideas and experiences with marketing and the discussions were held in three smaller sub groups, each on a product group and with one or two invited guests. This way, participants could choose what was closest to their own business, and the idea was that in a smaller group participants would talk more freely. One group was disappointed since their invited guests did not turn up. Even though, the meeting resulted in action agendas for three product groups. These action points were taken on board by the Market network.

The third plenary meeting was planned in February 2010, with land use as the central theme. Invited guests were from the provincial government, local nature conservation organisations and land use bodies. The aim of the meeting was to discuss how participants of Echt Overijssel! potentially could manage land owned by these parties, incorporating nature conservation in their agricultural practice. However, the majority of the participants had to decline for a range of reasons. The potential low turnout made the interim project leader decide to cancel the meeting, since the number of invited guests would be higher than participants from Echt Overijssel! itself. Unfortunately the interim project leader had only started recently in the project when the project leader had to step down due to an injury, and was not aware of the importance of this particular meeting. Feelings were very mixed about this cancellation, project team members and participants felt the interim project leader did not take the questions around land use seriously.

For further vision development, two meetings with a small number of participants were organised in spring 2010.These participants represented the three networks and were seen as the most active in the project, having ideas and contributing to discussions. A preliminary vision was developed with this group (Box 4), which was presented in the fourth plenary meeting in June 2010. This meeting also incorporated a presentation by a student who interviewed people involved in a variety of local food initiatives. Furthermore, a local farmer involved in one of those food initiatives told about their experiences. The turnout for this meeting was better than before. However, several participants commented later that the experiences of the local food initiative were not very promising, entailing a lot of hard work and great commitment of several people.

Box 4. Elements of a vision for Echt Overijssel! – spring 2010

- An umbrella organisation of farmers and traders (cooperative), deciding on volume of production, managing its own market. Local initiatives and individuals can join. The new co-operation, started by the Market network, could be the beginning of this cooperative. Its production methods should be viable for European subsidies, taking into account the potential greening of the Common Agricultural Policies.
- Produce and consume locally: food products should show seasonality, distinguished products. Market should be local retail and restaurants, perhaps even an own supermarket. Transport and distribution should be part of the cooperative. Undecided yet whether marketing should be part of the cooperative, or should be done by the individual producers; also undecided which consumer group should be targeted.
- Production should incorporate nutrient cycles and biodiversity. Nature should be part of the product and co-products should be given back to nature. This should be part of the marketing story. It also gives the opportunity to link to tourism in the region.

The fifth plenary meeting was organised around the theme nutrient cycling. Only four participants enrolled, but the meeting went ahead anyway and resulted in a clear action plan. This plan involved a pilot study to chart and analyse the nutrient cycles and environmental impact of three of the participants of this meeting. As it happened, these three farmers represented the Animal Feed, Cropping and Market networks. Even though it was clear what needed to be done, it actually took almost a year for the researchers involved to be able to present the results to all participants and extend the work to all farms.

For various reasons, it took till November 2011 to finally have the envisaged meeting on land use, although in a different setting. The new national government changed policies around nature management in such a way that in theory the potential for farmers to incorporate nature conservation land in their farming systems should be greater. However, it also meant alienation of nature conservation organisations, making the topic of collaboration between them and farmers a sensitive one. Since the project team conceived the participation of Natuurmonumenten and the province as vital for this meeting, time was taken to see how the political processes would develop and how these stakeholders could get together for a fruitful meeting. Again, the time frame these stakeholders and the project team had in mind for these developments was very different for than that for the participating farmers.

6.4.2 Monitoring and evaluation

The interactive monitoring and evaluation of the processes within the project resulted in important changes to the project approach. Because the project team experienced difficulties introducing the project goals in the networks without losing enthusiasm of participants, in September 2009 a survey was undertaken to explore the feelings and ideas of project team members and participants. Nineteen participants and ten project team members returned the questionnaire. It showed the motive of the participants to partake in the project were foremost to improve the viability of their own farm. The second most mentioned motive was to work together with other farmers in the region. The participants perceived landscape, regional co-operation and development of new product-market combinations as project goals. They thought the project goals would not be economically feasible. Nature or nature conservation were not high in their lists of motives or perceived project goals. The project team members perceived the economic viability of enterprises and the region as a whole as the most important project goal. This may mean they see a clear link between ecological and economic sustainability in the long run. The time frame farmers work with appeared to be (much) shorter.

Another part of the questionnaire focused on how to achieve the project goals. The returned questionnaires showed most participants and project team members had difficulty making the project goals explicit and translate it in actions. A clearer identity of the project was requested. The lack of land to be used for nature conservation and agricultural production was also mentioned. Economic feasibilty of the project goals was questioned. Furthermore, most participants felt conflicting interests and views were blocking the project goals.

From these results the project team concluded it had to work on linking nature and landscape conservation to farm economy and show results on short term. Together with the development of an identity, this was taken up in the action plan of the Market network and successfully implemented (see Activities of the Market network, above). Furthermore, an action plan was developed to get more nature conservation organisations involved. It was stressed that the project would not be an entity looking for available land for the participating farmers, but continued to aim for joint learning through experiments and exchange of experience and knowledge. Goals of nature conservation organisations should be seen as as important as those of the farming community. The action plan resulted in the organisation of a meeting between representatives of nature conservation organisations, local governing bodies and project participants. However, this was cancelled due to a lack of enrollment (see Forecasting, above).

Another evaluation session was held within the project team in January 2010, with important elements coming forward:

- Differences between individual and network or project goals appeared to be very difficult to overcome. Also some full time farmers did not see the part time farmers as serious partners in the networks. Furthermore, the busy daily agendas of the participants made it difficult to find time to spend together. On the one hand it was important to take time to create a common view of the regional challenges and built an atmosphere of mutual trust and respect, on the other hand some participants demanded high speed in the process and immediate action. So great skills and perseverance of the facilitators were required to keep the networks going.
- Participants signed up for the project because they liked the ambitious goals and abstract vision for future regional co-operations. But it appeared difficult for them to establish which questions needed to be addressed and which steps they themselves could take to achieve these project goals. Guidance was needed by members of the project team, e.g. facilitators or researchers, not just to develop and implement the action plans for the networks, but also to feed participants with ideas for which topics to address and which activities to carry out.
- Several participants withdrew in the first fase of the project. Reasons were (1) they wanted immediate action, mainly aimed at land becoming available for them to use within their farming system, (2) they did not see how the network goals could benefit their own business or (3) how they themselves could be of any benefit to the network, and (4) they could not meet the time demand of the networks.
- Participants more and more doubted the importance of biodiversity or nature conservation within the region. They saw the comments in the media from national government and farmer representatives, stressing land use should be aimed at food production because of the increase of the world population. Participants doubted if subsidies would continue to be available for agricultural management aimed at biodiversity.

The project team decided to further define the action plans of the networks. Where common ground would be difficult to achieve, it also would be possible to define actions for a sub-group of a network. Furthermore all participants would be invited to partake in the activities of all networks or sub-groups. It was concluded that communication, both within as outside the project, was crucial to keep people up to date and involved in the various activities and how these activities would benefit the project goals. The importance of the action plan to get nature conservation organisations more involved was stressed again. It would also give the opportunity to highlight some examples of long term payment schemes for nature or landscape management. Expectations of the plenary meeting on land use were therefore high. The greater was the disappointment that this meeting was cancelled due to low turnout of project participants.

6.5 Reflection and discussion

6.5.1 Reflection on project approach

The approach followed in Echt Overijssel! built on the theory of System Innovations. The problems or challenges central in the project can be considered ‘complex’ problems since they are multi-facet (involving environment, people, nature, products, etc.), multi-actor (involving a diversity of regional stakeholders), and multi-level (involving both the level of the individual farmer and the regional level) (*Project Theory 1*). As increasingly stressed in literature, this kind of complex problems cannot be addressed nor solved in a traditional, linear way but demands a so-called system innovation approach that reflects all facets, actors and levels (e.g. Elzen *et al.*, 2004; Loorbach and Rotmans, 2006; Regeer and Bunders, 2009). The ultimate aim is to develop new ‘regimes’, consisting of new ways of thinking and (inter)acting, new rules and routines among actors involved that contribute to meeting the challenges. In Echt Overijssel! a targeted new regime comprises the establishment of new regional co-operations or product chains, as well as new ways of farming and nature conservation that all contribute to the sustainability objectives defined above (*Project Theory 2*).

According to Vogelezang and Wijnands (2009), system innovation processes can roughly follow two different routes: forecasting and backcasting. The forecasting route starts with individual innovative

initiatives which are nurtured, strengthened and extended and together contribute to a change of regimes in an incremental way. The backcasting route starts with formulating future visions and goals and then defines necessary steps to achieve these goals while identifying possible obstacles to be overcome (the 'transition points').

In Echt Overijssel! the routes of forecasting and backcasting are combined. In order to meet the long term goals and challenges defined within a dynamic operating environment, ambitious visions of the future need to be formulated (*Project Theory 3*). Backcasting from these visions helps to identify necessary steps to take. However, at the same time any enterprise involved needs to remain profitable as it moves towards long-term goals, implying the need for forecasting how to advance towards the future (Dortmans, 2005). Both routes can reinforce and accelerate each other, ensuring the connection to individual interests and initiatives as well as the guidance by overarching goals and ambitions.

Within the forecasting route, individual knowledge and experiences need to be exchanged in order to optimise the impact of individual initiatives and practices on a regional level. For this purpose, a methodology of networks is used, based on the theory of living networks by Wielinga and Vrolijk (2009). The networks are carefully guided and inspired by network coaches, who play the role of intermediaries or facilitators and facilitate mutual learning and knowledge co-creation processes (e.g. Tarmizi *et al.*, 2006; Regeer, 2010) (*Project Theory 4*). The backcasting route in Echt Overijssel! is based on the methodology for participatory backcasting of Quist and Vergragt (2006), with elements of the reflexive interactive design approach of Bos *et al.* (2009). Essential in this methodology is the involvement of stakeholders in interactive settings in the entire process (*Project Theory 5*).

The overall project is monitored via an interactive monitoring and evaluation approach (Regeer *et al.*, 2009) that mainly focuses on facilitating internal and external learning processes.

The project approach consisted of two pathways: forecasting and backcasting. For the forecasting route, three thematic networks were established, functioning as Communities of Practice to develop new ways of working within the existing farm systems or businesses involved. For the backcasting route, thematic plenary meetings were organised to create awareness, show inspirational examples and ideas, create a common vision and develop an action agenda.

Part of the backcasting route was already executed before participants of the rural community were on board. In this early phase of the project the three goals were established and a vision that new regional co-operations were required to achieve these goals. The early project phase also determined the choice of the themes for the networks in the forecasting route. Only because of the long delays in attaining full finance for the project, were these activities executed by a small number of people before the project could really start. This meant that the members of the project team and some facilitators, who were engaged at an earlier stage, were much further in their thinking than the other facilitators and participants once the project really got under way. With hindsight, this didn't allow much time for them to grow in the project, to learn about and contribute to the goals and to define which activities would be needed. This may well have resulted in less engagement at the beginning of the project. The backcasting route has its roots in transition theories; with the idea that a desired society can be created in a controlled way. With the way this project started, this meant a relatively strong top down approach at the start.

The forecasting route is less controlled. Even though participants were selected who agreed on the project goals and were willing to experiment or implement changes in their farm systems to achieve these goals, the project team did not demand specific on-farm activities from the participants. However, the action plans of the networks were approved by the project leader. Also, the networks needed permission of the project leader to spend project budget for network activities. Consequently network goals and activities were checked against the project goals. In reality, there was a good interaction between facilitators and the first project leader to achieve a smooth process to clarify goals and deliverables, and funding was never declined. This did frustrate the representative from Dianthus on the project team though, who wanted to be much more authoritarian about what participants

would be allowed to do. Especially in the Cropping and Market networks this resulted in disagreements, but the project leader decided to let the networks have their way.

Within two years of the project, some important steps towards the project goals were made. Within the backcasting route the formal designing of new collaboration concepts and alternative product chains in agriculture was not successful, but ideas were generated and several farmers started thinking about what this would mean for their situation, some already acting on it. Results of the backcasting route also enabled the project team to evaluate the planned activities of the networks against the overarching project goals. Within the forecasting route the inspirational effects of the plenary meetings and the evaluations on project team level became visible, with for example the integration of biodiversity within agricultural systems getting a foothold. Also new marketing concepts were developed and already put in place, improving the profitability of the new ways of farming. The start of a new foundation and its further development, fed by reflecting on its advancements and goals at the level of the project team, are seen as the initial phase of the new regional collaboration concepts envisaged by the project initiators.

The approach of the project created an environment for co-development. Setting up action plans in a participatory way, within the project, achieved in two of the three networks commitment from the participants and advances in their daily practice. The possibility to execute the project this way, instead of having to pre-define activities and results, was a prerequisite, but certainly not a natural one for the funding bodies. The difficulties with incorporating European funding showed that the then prevailing EU funding and control systems were slowing down these types of progress, instead of supporting it. At present the approach of networks is integrated in a funding system of the Dutch national government. However, the initial phase of network development, setting goals and defining activities, still needs to be executed in the pre-project phase. This bears the risk that not all relevant stakeholders are on board in this pre-project phase. For example experts or professionals define the project plan, consulting a few potential network participants and facilitating the networks themselves, making the pre-project phase effectively an acquisition trajectory. As seen in our project many farmers expect the facilitators or experts to have pre-defined the goals and necessary actions, hence following a more linear approach. If these experts are well in touch with the current practices and challenges, the networks can produce very valuable results.

The project initiators assumed the project would involve changing choices of farmers, and development of working relations between employees of nature conservation organisations and farmers. Both aspects did evolve in the initial two years of the project, though not to the same extend for all participants. Many of the participating farmers were dependent on contracts with regular traders of commodities (albeit often organic). They did not see governing bodies as reliable partners providing subsidies, nor did they believe in economising efforts to improve biodiversity or nutrient cycling via the market. This would involve a long process of a societal shift, chain partners willing to incorporate this in marketing and payments to the producers, consumers willing to pay the associated higher product price. Their network within their agricultural sectors did not support this kind of shift, increasingly stressing the need for food production, for farm expansion and intensification. Many farmers responded by trying to produce more from their existing land, increasing their stock numbers and investing in bigger animal housing buildings. This reinforced their wish to expand in hectares as well. The way their networks operated, and their own background of independent family farm enterprises, made it obvious for them they needed to be in charge of the management of the potential new land made available to them. During the initial phase of the project it appeared impossible to get them thinking about co-operation on an operational level with other parties, managing this land together to achieve a variety of goals. Several farmers felt that their certified organic production system should be enough to secure the land owners management was ecologically sustainable. Furthermore, many farmers in Overijssel were hindered in developing their farms because of nearby Natura 2000 areas (De Bont *et al*., 2011). These stories dominated the media in the years of the project, increasing the social pressure to reject co-operation with nature conservation organisations.

The results of the national election of 9 June 2010 also hampered the spirit within the project. After the elections it was clear there would be great shifts in policy regarding land use and subsidies for societal needs. The coalition agreement of 14 October 2010 confirmed this. Especially for the nature

conservation organisations this resulted in a time of great uncertainty and insecurity regarding their future existence. This considerably delayed the process to organise a meeting between project participants, provincial government and nature conservation organisations to discuss options for future co-operation in land use. However, personal interest from some participants and members of the project team kept this on the agenda, resulting in a non-committal meeting late 2011.

The first project theory, '*The project addresses 'complex' problems: multi-facet, multi-actor and multi-level; therefore the project requires a 'system innovation approach' in research and development*' can not be substantiated by the project. However, the vision of regional co-operations, implementing changes in farming systems to achieve the project goals (agriculture with high value for nature or biodiversity, closing of nutrient cycles, and new product market combinations to make these first goals economically feasible), seems too complex to be achieved by a linear approach. For example the network demanding a linear approach (i.e. the project team should arrange the possibility for the farmers to use land of nature conservation organisations, creating the path for the farmers to follow) did not achieve much. The networks with a greater variety of people involved contributed more to the project goals. They brought together different points of view, different networks and different skills. After initial difficulties were overcome and the group had positively decided they did want to learn from each other and valued each other's input, both networks achieved important steps.

The networks had three very different ways of operating. The Market network started in a conflict situation and after parting with the representative of Dianthus the network decided to operate as one group to support the transition of one of their members. The Cropping network took an existing experiment as an inspirational example and decided to execute experiments on virtually all participating farms. Both networks consisted of a mixture of participants, from small to large scale farmers and farmers with multifunctional enterprises. They clearly discussed several options, made choices and received project support for their activities. These networks have undertaken collaborative initiatives that really contribute to the concept of regional agriculture. The Animal Feed network consisted of individually operating livestock farmers with many involved in activities expanding their own business. During the project it became clear the main motive of the majority was to find additional land to use in their enterprises. They were actually competitors on the land market, making it very hard to find common ground to operate as a team. So common interests were hard to find in this group, which is a prerequisite for group formation and achieving shared goals (Grin and Van de Graaff, 1996). This was not anticipated at the time of project development or start. Sourcing of feed in the region was seen as the main interest, which would be much better to deal with as a group.

Also, some participants strongly resented the overall project goals after the first two plenary meetings, negatively influencing the mood in their network. Furthermore, the lack of strong and consistent facilitation contributed to the lack of inspiration and team spirit. This group did not contribute to the concept of regional agriculture in a direct way. Indirectly, lessons were learned however, changing the way the project team approached the topics of land use, identity development and development of cooperative structures.

The experiences in the networks substantiate the second project theory '*New ways of farming and new regional co-operations or product chains are required to achieve the project goals'*. For example the Cropping network started with the wish to develop a grain cropping system that supports a high nature value, and developed new production methods through experimenting in the field. They experienced the low financial profit of the new system and to support it economically, this network came with a new product chain, in the process developing a new co-operation between nature conservationist, farmer and baker. So by starting with just one of the project goals, this network encorporated seemingly naturally other project goals on the way, and ended up with a new collaboration in line with the overarching project goal. There was no explicit future vision, nor a clear business case. So this creates doubt to what extend the third project theory '*Ambitious visions of the future need to be formulated to achieve the project goals'* can be substantiated. However, one can argue that a commercially viable grain cropping system that supports a high nature value is already an ambitious vision of the future by itself.

The Market network worked the other way around, and started with the idea that the participants would need a new regional co-operation and product chain to achieve all three project goals. They did achieve the regional co-operation and product chain, but are still not able to show whether their farming practices actually support the project goals of agricultural nature management and closing of nutrient cycles. Supported by other project activities they are currently trying to make up for this omission.

From these experiences in the networks, we conclude that the fourth project theory, '*Networks or Communities of Practice are needed to take steps forwards; they need to be guided by facilitators or coaches to achieve knowledge co-creation. Apart from the farmer groups, this also implies to the project team as a whole*', is well supported. The role of the facilitators and the effects of guidance and facilitation, or the lack thereof, were clear.

Regarding the backcasting route, the project team did not succeed in achieving a good attendance rate of the plenary meetings. The fifth project theory, '*The involvement of stakeholders in interactive settings in the entire process of backcasting is essential to achieve the project goals*' may have been pushed too far in this project. The project team showed the participants all facets of the project, including the rather complicated approach. This made it difficult for the participants to understand what was going to happen and what was asked from them. The majority rather would have heard a pre-developed vision and a clear proposal how to achieve this. By trying to involve all participants to all steps in the development of the vision and action plans, many felt alieniated from the overall project goals. This may well have contributed to negative remarks of participants like 'waste of my time', 'waste of community money', 'too abstract', 'not applicable to my situation'. The approach within the networks was much closer to their current situation, making it much easier to understand what they could do. The experiences in Echt Overijssel! raised the question whether the targeted transition could be achieved by involving just a few innovative entrepreneurs, developing a business case for a local co-operation before inviting farmers and other local stakeholders to join in. At that point farmers would be obliged to meet the specified management or farm system requirements. This line of thought is now implemented by supporting and coaching the Market network in the further development of their foundation Nature Farmers from the Neighbourhood. Experiences in other projects and local initiatives show that this route has the risk of the new co-operation staying too small to be economically viable or to enable sharing responsibilities and tasks to make use of participants' different competencies. Being embedded in a broader project, the development of this new foundation is however supported by a wider community, bringing guidance (e.g. to achieve collaboration between stakeholders who not usually work together), knowledge and the financial ability to take vital steps.

6.5.2 Reflection on the Echt Overijssel! case

The experiences in Echt Overijssel! show that simultaneously combining both forecasting and backcasting routes with the same participants somehow implies a contradiction in terminus. Participants are asked to formulate future visions with a long time frame and at the same time develop their own activities for the short term in an incremental, maybe even unintentional, way. However, we still believe that both routes of forecasting and backcasting can reinforce and accelerate each other when executed together for the same project goals. The experiences in this project show that a vision for the future helps to guide todays' choices.

It became clear that different social networks were involved, with not much overlap in people. Some participants were operating individually, did not seek co-operation on an operational level, were sector and technical oriented and aimed for viability of their own enterprises on the short term. Other participants operated in other social networks, due to other jobs or multifunctionality of their farms. They were seeking co-operation on strategic and operational level, favoured joint learning, and aimed for medium term goals. The project goals had a long time frame, reflecting the social systems in which the initiators were operating, being used to long, slow processes to achieve system changes. Bringing people together from these different backgrounds, meant time was required to get to know each others' intentions and possibilities. Not all participants allowed this time, with several dropping out, mainly from the first group mentioned above. They hesitated to put a lot of time and effort in activities

that were to meet long term regional goals but did not address their daily life needs and even might entail changes in their own farming systems. They did not believe that collaborative actions towards the project goals could potentially be beneficial for both regional and individual goals.

The project has been very fortunate that financiers did not pull out and allowed the project a few years before clear results were visible. Because of the required processes, it is important that the duration of projects like Echt Overijssel! is substantial and that demands for project deliverables are kept relatively open. This requires trust and patience from the financiers and good communication between project management and financiers. Although at the project level, mid-2011 important challenges still were the achievement of both a feeling of coherence and togetherness between the three networks and an overall commitment among participants to the long term goals of the project, some important results were achieved after two years of project preparation and two years working with participants from the local community.

Even though the large variety of participants made the start of the project difficult, it may in the end result in more robust knowledge, i.e. knowledge that can be used by a greater range of players in regional agriculture, then what would have been developed when the participants were more uniform in background. We cannot elaborate yet on whether this will prove to be true in our case, but indeed the two networks with the greater variety of participants achieved clear steps towards the project goals.

Reflecting on our experiences, we suggest that the following actions will support active farmer involvement in regional design and development processes:

- Adequate networking and participative design of regional agricultural systems requires specific social skills from all participants. These social skills may be crucial for building long term co-operation as well, which we see as an important aspect of further regional development. Taking social skills for successful networking as a criterion for selection of participants and facilitators thus may support the process of designing regional agricultural systems as well as the implementation of the designed systems. Also, it may be beneficial to take on the development of these social skills as an explicit project activity.
- Addressing the individual benefits of participation in the overall process and accounting the expected profits may persuade entrepreneurs to take part in the process more actively.
- A small group of interested and visionary farmers / entrepreneurs need to be involved actively early in the process, not only to set the first contours of goals, chances and possibilities but also to define necessary activities within the project. In our experience it is not sufficient to involve representatives for this purpose.
- This small group could also be used as a tool to inspire other participants and facilitate the creation of commitment with and ownership of overarching visions and goals.
- For the purpose of vision formulation it might be beneficial to involve visionary stakeholders who are not involved as participants in the project. Vision formulation should be a step ahead of other project activities, to be able to check whether they will support the development of the envisaged future.
- In the initial phase it may prove helpful to execute pre-defined actions as excursions, small scale experiments and monitoring on farm level. Do not expect the participants to formulate their common action agenda in a short time span. They need time to get acquainted with each other, with the project goals and with the tools the project provides.

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7 Conclusions: Taking stock of the lessons learnt

Roel During

7.1 General

The project as a whole can be seen as one big experiment. The overall ambition has been to invite those who are most informed and embedded in regional innovation planning to reflect on the process and their role by referring to and using different theoretical concepts. The instructions have been formulated rather loosely, on purpose. The project did not intend to superimpose theoretical frames on practitioners' realities. Rather the other way around, practitioners have been invited to learn about methodologies and theories and their application in social action to enhance reflexivity in their (self) analysis.

The preceding chapters show great variety in the way researchers or process managers succeeded in applying the three-step methodological approach introduced in the first chapter. Some addressed all three frameworks by scrutinising them, organising discussions, become comfortable and use them. Others just referred to the concepts in a loose way. All cases however succeeded in distancing from practice and re-analyse their own work in a critical way. This is an important step forwards with respect to the analyses presented in the edited volumes 'Transitions towards sustainable agriculture and food chains in peri-urban areas' (Poppe, Termeer and Slingeland, 2009) and 'Transformation and sustainability in agriculture' (Vellema, 2011). Where in these preceding publications the contributions were either theoretical or practice based; now we can go beyond this distinction with these self-reflective analyses, with thick descriptions of what happened and a critical theoretical review.

Below we will take a closer look at the outcomes and find shared lessons, striking differences and a capitalisation on the design of this project, including self-criticism.

There are many observations that connect the case descriptions. One can observe the dramaturgic analysis of the cases to be fruitful in highlighting the course of events, the interdependencies between actors and between politics, entrepreneurs, and civil society institutions (including knowledge brokers). The drama is unique for every case. Some elements of the drama seem to be overall present. All cases more or less show regions trying to profile themselves in the world market and the boosting with roaring slogans is a precondition for political support. This on the other hand leads to alienation of individual entrepreneurs, who are having troubles to connect to these stories (seen for example the Venlo, Noordoostpolder and Echt cases).

The role of the facilitator becomes important here. In the case of Echt Overijssel (Chapter 6), the facilitator took responsibility for this situation and the actors urged for a well-defined pathway of actions they could follow. This creates path dependency in a very strict sense, due to the attributed and self-defined role of the facilitator. In the case of the Noordoostpolder (Chapter 4), the process facilitator has chosen for a different approach, accepting different realities within the project and defining his role as a translator. His conception of bounded communities helped him a lot to understand these different realities.

If one departs from the idea of different realities, the fact that different funding parties such as Transforum, bringing in their own set of rules is not that problematic. The problem of alienation existed right from the start in Echt Overijssel because of the top-down start of the initiative. This makes bridging the abstract unifying concepts and concrete acting instructions difficult or maybe impossible to handle. We have read here how entrepreneurs became dismayed because of the discourse on world food production that went far beyond their reasonable scope. We can observe here

that the choice on how to act as facilitator is taken on an individual basis and is not part of an overall methodology.

The social systems analysis was a tough one due to its sophisticated and deep theoretical approach of communication systems. The Noordoostpolder case took an advantage from this theory by its analysis of brokering bounded communities and the Venlo case (Chapter 2) was primarily based on this analysis. The results are very interesting as it shows how actors deal with heterogeneity within their context. The opening and closing of discourses and its relations with inclusive and exclusive concepts in use, need further analysis, but already show the deep dilemmas of obligatory consensus seeking. The broker or facilitator that acknowledges this fact of life is performing better results than the one that is trying to create one reality, one common opinion and one framework of action.

The social system analysis has been used to increase our understanding of the distinction of public and private in partnerships. This however needs further discussion and consideration on the basis of much more detailed information on the evolution of discourses. The idea of different languages on both sides of the distinction has been substantiated in the cases of Venlo and the Noordoostpolder, but there will be much more to discover with a greater detail of discursive interactions.

In the case of Echt Overijssel the project facilitator sees her role as connecting the entrepreneurial community of multifunctional farmers to the policy aims and like. In the Noordoostpolder, he is confronted with an array of sustainability concepts to relate to: regional agriculture, cyclic agriculture, agricultural nature management, etc. This refers to discursive evolution of concepts within the arena of public policy making. In Echt Overijssel, however, the logics of intervention was more top down (sprouting from the institutional setting and not from the entrepreneurial community) and as a consequence this evolution of concepts was a problem for achieving consensus on addressing them with a programme of projects. The facilitator worked with an interactive design of a cooperation process that encompassed three learning networks and was supposed to yield projects after reaching consensus on them in a plenary meeting. One of the biggest problems, however, was to align the goals of the networks with those of the projects. This problem was dealt with by combining and alternating forecasting and back casting. The latter however was insufficiently recognised as a working tool by those in search for concrete actions.

The Logic of Intervention Analysis has also proven to be useful in achieving a more reflective analysis. The case of the Betuwse Bloem (Chapter 3) has shown the intervention logics of political involvement. Striving for a far reaching involvement of entrepreneurs has been recognised as a key element of the intervention logics. In this case political participation and support (public funds) has been acknowledged as the most important stepping stone to push the region forward. The intervention logics focus more specifically on establishing an umbrella of projects, some initiated by the pacts within the organisational framework Betuwse Bloem, others by the Province. One can see this as a preliminary stage of co-creation, supposed to contribute to enhanced regional competitiveness.

In the case of the Noordoostpolder the logics of intervention is slightly different, because of a different setting of stakeholders. Here a basic distinction is used between process and contents, where the first is related to political support and the latter to the support of the national innovation programme Transforum. This in turn leads to a second distinction that has to be handled: abstract and concrete. The logics of moving forward is to translate abstract sustainability aims, that address policy agenda's into concrete action, often linked to what's already initiated in the region. The facilitator acknowledged a dilemma here, because more concrete action is good for embedding and participation within the entrepreneurial community. In the context of addressing policy agenda's flexibility is required and even agility.

7.2 Criticism on the project methodology

7.2.1 On methodological approach

This project encountered several methodological problems, that need further discussion and clarification. An important issue here is the difficulty of combining instructive and reflexive theories. In the case of Echt Overijssel for instance the facilitator used theories of system innovations to design the interactive process. This is a severe hindrance for adopting a totally different theoretical framework that is less prescriptive and more reflexive. In the case of Venlo the planning process was very dispersed and as a consequence very difficult to understand. It would take a far greater research effort to achieve that level of detail that is required for drawing conclusions on the role of facilitators, project managers etc. Sketching a coherent picture of a regional planning process with so many arenas and stakeholders is almost impossible. This cannot be achieved from the perspective of one person that is involved as facilitator.

7.2.2 On the combination of theories

The combination of theories can be disputed on epistemological reasons. The social systems analysis applied in the way it has been described here can be interpreted as post structuralism, whereas the dramaturgic analysis and the intervention analysis can be seen as advanced evolution methods.

7.2.3 Critical approach towards innovation (innovation for innovation?)

None of the facilitators took a very critical stance towards innovation as a mere vehicle to making policy agendas. They seem to believe that innovations are out there, within reach and to be capitalised with an adequate project. This implies the methodological frame to be rather indifferent towards ontological issues. This could be improved.

7.3 New questions beyond the results of this research project

In a follow up analysis more emphasis should be put on co-creation and how to evaluate this. As regional transitions grow mature, the interface between the public and private realms becomes more complicated, not only in term of organisation, partnership and shared initiatives, but also for ownership (intellectual and the ownership of the initiative) and new interdependencies. The planning process could be analysed more in depth by using co-evolution as a key concept, that addresses the distinctions of private public, of bottom up and top down and of the entrepreneurial and knowledge issues. It would even be useful to look at the entrepreneurial communities as business ecosystems.

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