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MASTER THESIS

POLDEREN VERSUS INNOVATING:
MECHANISMS FOR SUCCESSFUL STAKEHOLDER COLLABORATION IN A TRANSITION TOWARDS SUSTAINABLE FOOD PRODUCTION IN PEAT MEADOWS

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1. ABSTRACT

To reduce biodiversity loss, CO2 emissions, salinization, and flood risks in peat meadow areas, a transition is required from conventional agriculture that is based on draining of the peat soil to future-proof agriculture that can thrive in wet conditions. In the Vrouw Vennepolder, a peat meadow area in 'Het Groene Hart', a local project aims to bring about this transition. Such community-based governance (CBG), according to the literature, could offer a possible way to enable a transition to sustainability through collaboration among stakeholders on the community level. An analysis of the stakeholders within the project in the Vrouwe Vennepolder shows that the challenge is to connect both conservative and innovative stakeholders that are present within peat meadow areas. Moreover, by investigating other cases in peat meadow areas through the conduction of expert interviews and the use of a hermeneutic research method, it becomes clear that collaboration between stakeholders in terms of (1) consensus-seeking and (2) innovating both require different conditional factors to thrive. Seeking a balance between these two is a process that CBG arrangements need to deal with when facing a transition. The context of a transition introduces new elements within the parameters that determine how collaboration between stakeholders takes place. Especially concerning the absence of clear mutual gains and the high amount of uncertainty present. This is an aspect that previous theory on stakeholder collaboration has not been able to capture. A few recommendations are formulated to improve collaboration between stakeholders in the Vrouw Vennepolder and CBG in general. First, a balance needs to be sought between innovation and polderen by implementing factors that combine both types of collaboration. Second, an integrated and reflexive mutual gains approach is necessary to identify unobserved mutual gains to motivate stakeholders to collaborate. Third, CBG arrangements need to include higher governmental actors within a collaboration to anchor change institutionally. Fourth, adaptive governance from national governments is necessary to adequately provide instruments and policies that are needed on the local level.

2. INTRODUCTION

Every year the peat soil in 'Het Groene Hart' in the Netherlands sinks on average 1 cm due to subsidence (RLI, 2020). This is the consequence of intensive agricultural activity in peat meadow areas. Most crops used for human and animal consumption require well-drained soil. Therefore, the water table in peat areas is artificially lowered to enable cultivation. However, this has consequences for the environment. The peat lays dry and oxidizes, emitting the carbon stored in the soil. 15% of the Dutch agricultural soil is peatland, which is responsible for 2-3% of the total CO_2 emission in the Netherlands (Kwakernaak et al., 2010). Moreover, biodiversity in peat areas is declining due to the absence of wet soils and the intensive use of liquid manure (WNF, 2020). Other consequences of subsidence are salinization of the groundwater and an increased risk of flooding. Consequently, the cost of dike re-enforcement and loss of arable land due to salinization will rise in the future (PBL, 2016).

The Dutch government has set a target to reduce 1 megaton of CO_2 emission from peat soils by 2030, to prevent subsidence and rising global temperature (Ministerie van BZK, 2020). Higher water tables of at least 20-40 cm below ground and rewetting of the land are needed to reduce emissions (RLI, 2020; Tanneberger et al., 2020; Tiemeyer et al., 2020). Earlier attempts of rewetting in the Netherlands have not been successful. Already at the beginning of this century, the urgency of subsidence and the need for alternatives was clear (Rienks & Gerritsen, 2005). According to Rienks and Gerritsen (2005), a part of the explanation why it has not been executed is the short-term focus of local governments in charge of implementation and the absence of reliable long-term alternative land-uses. More importantly, earlier top-down implementation of higher water tables did not include stakeholders' interest and therefore these attempts faced strong opposition from agricultural stakeholders (van Hardeveld et al., 2018). Additionally, peat meadow areas have become part of the cultural-historical landscape of the Netherlands, which residents feel attached to (CRa, 2020; Deickert & Piegsa, 2016). Therefore, changes in the landscape are likely to provoke opposition from local communities as well.

Preferably, peatlands should perform multiple functions because of the scarcity of available land area in the Netherlands. Therefore, productive use of rewetted peat meadow areas seems optimal, since they can provide different ecosystem services such as food provisioning, water retention, and habitat for species (Joosten et al., 2016; Tomscha et al., 2021). Current use of the drained peatland consists mostly of dairy farming (PBL, 2016). Raising the water table means that many current agricultural uses become problematic, as most plants for feed or food require drained soil to allow oxygen to enter through the root (Mulholland et al., 2020). Alternatively, there are possibilities for extensification of livestock farming and the cultivation of crops that grow in wet soil. However, the economic outlook for these alternatives appear pessimistic, as stable regional markets are absent for these crops and the cost of production for dairy farming increases (Daatselaar & Prins, 2020; Geurts & Fritz, 2018; RLI, 2020).

The need for a business model that supports the sustainable production of food falls within a broader need for a transition to a sustainable food system. Human food systems are vital to combat climate change, since food production, the agri-food chain, and land-use changes account for 1/3 of anthropogenic emissions (Crippa et al., 2021; Rockström et al., 2020). However, changing our food systems is complex and requires a constructive dialogue among a range of different stakeholders to build a shared feeling of responsibility (Herrero et al., 2020).

All of these issues come together in the Vrouw Vennepolder in Leiden. A peat meadow area of 32 hectares that in the coming ten years will be developed into a future-proof productive area. Leiden University will perform a long-term research project here, aiming to address the topics of biodiversity loss, climate change, sustainable food production, alternative business models, and the rural-urban divide. However, the main underlying problem that has to be addressed is subsidence. Ultimately, the project aims to evoke a transition towards a sustainable form of agricultural land management across peat areas in North-western Europe. The multifaceted and complex nature of this transition will require a large group of different stakeholders to collaborate.

The main objective of this master thesis is to understand how all different stakeholders can help establish a transition towards sustainable food production in the Vrouw Vennepolder and other peat meadow areas in the

Netherlands. This form of governance in which different stakeholders from the state, market and civil society collaborate to make decisions, plan and act, is often referred to as community-based governance (CBG) (Sattler et al., 2018). Collaborative and participatory forms of governance, like CBG, have increasingly become preferred by scholars and practitioners over more top-down governance, since top-down steering has not been able to effectively deal with the transboundary and complex nature of environmental problems (Gerlak et al., 2012; Van Kersbergen & Van Waarden, 2004). CBG, according to Van Bussel et al. (2020), can provide an alternative to manage the ecosystem services of peat meadow areas. However, the diversified nature of CBG brings in many challenges as well and it is crucial to understand how it can overcome these challenges to enable a transition towards sustainable food production in peat meadow areas. Therefore, the main research question is:

How can community-based governance help establish a transition towards sustainable food production in peat meadow areas in the Netherlands?

Sub questions:

1. *What are positive and negative factors according to the literature on stakeholder collaboration?*
2. *What are the positive and negative factors of stakeholder collaboration within cases in peat meadow areas?*
3. *Which stakeholders are important for the establishment of food production in the Vrouw Vennepolder?*
4. *What are the perspectives of each stakeholder on the project in the Vrouw Vennepolder?*
5. *How should the future collaboration between stakeholders in the Vrouw Vennepolder and other cases take place to enable a transition towards sustainable food production?*

This master thesis is structured as follows. First, a literature review discusses the topic of sustainable food production in peat and explains why it is necessary to study the role of community-based governance in enabling a transition. Second, a theoretical framework provides a first inquiry into which factors are important for stakeholder collaboration and transition management. Third, a stakeholder analysis is performed among the stakeholders in the Vrouw Vennepolder to create an overview of stakeholders, their perspectives, and the challenges of stakeholder collaboration within the project. Fourth, expert interviews were carried out following a hermeneutic research approach to analyze what positive and negative factors of stakeholder collaboration have been in different cases and how this compares to existing theory. Finally, the results of the stakeholder analysis and expert interviews are discussed and advice is formulated to the Vrouw Vennepolder and the theory of community-based governance in general.

The goal of this research is not to follow and investigate a community-based governance project but is to assess the community-based governance model and help further develop it by illuminating the factors that are important for successful stakeholder collaboration in peat meadow areas. Simultaneously, the goal of this research is to provide advice to the Vrouw Vennepolder and community-based governance on how to deal with the process of stakeholder collaboration to enable a transition to sustainable food production in peat meadow areas.

3. LITERATURE REVIEW

3.1. FOOD PRODUCTION IN REWETTED PEAT

1000 years ago the Netherlands consisted of mires and marshy forests. Since the 10th century, these wet peatlands have been drained to enable cultivation. Initially, mostly arable farming of cereals and flax seeds was applied on these drained land. Gradually, farmers switched to dairy farming, as this became more attractive due to export stimulation by government policy, economic revenues, and innovation of water drainage technologies (CRa, 2020). Eventually, in the 20th century, especially after WOII, intensification led to higher production of dairy. This coincided with the lowering of water tables and homogenization of the landscape (Jongman, 2002). From 1990, the cost of water management rose strongly and led to the attention of policymakers toward the issue of subsidence (Rienks & Gerritsen, 2005). Ever since, the issue of soil subsidence has picked up attention, but policies have been lacking (Gils et al., 2020). Recently, it has become indisputable that water tables have to increase, and that there is a need for sustainable economic alternatives on these wet acres (RLI, 2020).

The possibility of producing food sustainably in wet agricultural land in the Netherlands remains unclear. The first strand of literature focuses on the possibilities of dairy farming. The cost of producing milk, cheese, and meats increase when the water table is raised (Daatselaar & Prins, 2020; De Vos et al., 2010). Livestock farmers are left with no other option than to buy additional fodder to remain at the same level of productivity, as grass growth starts later in the season. Additionally, the wet soil cannot manage the weight of heavy machinery and large amounts of livestock. When water tables are raised to 20 cm below ground this could mean a halving of a farmer's income (Daatselaar & Prins, 2020).

Most farmers already have difficulties acquiring proper prices for their products. As the prices on the global market often remain constant while the cost of production rises due to increased government regulations (Erisman, 2021). Different sources of income are needed to compensate for the loss of income. An option is to adopt a less extensive model of farming with income from different activities such as regional products, nature management, and recreation. Experience from circular farmers in the Netherlands shows that this can offer a viable business model (Erisman & Verhoeven, 2019).

Alternatively, a type of wet arable farming, named paludiculture, could be applied in the rewetted peat meadow areas. Paludiculture refers to the productive use of wet peat soils that aims to protect ecosystem services (Joosten et al., 2016). It is specifically designed towards peat and can be regarded as a type of wet agriculture (van Duinen et al., 2018). A variety of crops can be grown in wet soil, such as berries, vegetables, herbs, and wild rice (Abel et al., 2013). These crops have a root system that is adapted to the wet soil conditions and allows oxygen to enter through other parts of the plant (Mulholland et al., 2020).

Explorations on the possibilities of paludiculture have been performed previously (e.g. Mulholland et al., 2020; Bestman et al., 2019; Geurts & Fritz, 2018; van Duinen et al., 2018; van Duursen & Nieuwenhuijs, 2016). Already in 2015, 60 different pilot experiments were performed in 8 different locations in the Netherlands (Geurts & Fritz, 2018). These pilots mainly focused on the production of cattail and reed as building materials and only partially looked into the production of food. Therefore, it remains unclear whether there is a feasible business model for wet agriculture that produces food.

Another idea that has been opted within the research project in the Vrouw Vennepolder is agroforestry. Agroforestry is the combination of forestry with agriculture in a permaculture fashion. Many uncertainties exist on the application of agroforestry in peatlands. In Indonesia agroforestry is performed in wet peatland and shows to be successful (Silvianingsih et al., 2020; Widayati et al., 2016). However, the climate of Indonesia's peatland differs heavily from the Netherlands. It is unclear whether the wet peat soils in the Dutch context allow agroforestry. Most tree species root deeply into the soil and dislike humidity nor the low pH of peat soils. Some tree species like alder, poplar, and willow are more common in wet areas, but they do not provide food (Abel et al., 2013; Geurts et al., 2019; Mulholland et al., 2020).

Scientists in the Vrouw Vennepolder are considering experimenting with small heaps of soil on top of the peat layers. This could provide dry spots for tree and perennial species to root in and make a type of agroforestry on peat viable. An additional problem of agroforestry in peat meadow areas is that it could form an obstacle for nature conservation. Many farmland bird species live in the peat meadows (WNF, 2020). Agroforestry does not provide a fitting habitat for these species that prefer vast areas of grassland. Also, citizens of the surrounding areas might lose their view and connection with these cultural landscapes as a consequence of agroforestry. Therefore, enabling a transition to sustainable food production in peat meadow areas is not only a technical issue but also an issue of governance that needs to be aware of different stakeholders' interests.

Earlier top-down attempts of dealing with subsidence in the Netherlands have shown that ignoring stakeholders' interests problematizes implementation of higher water tables (van Hardeveld et al., 2018). The issue of subsidence is a problem that is not owned by a single actor and, therefore, involves a range of actors that need to collaborate and come to an agreement such as waterboards, landowners, farmers, citizens, and local governments. Different organizations in the Netherlands indicate as well that enabling a transition to sustainable food production in peat meadow areas requires the inclusion of a wide variety of stakeholders with a shared feeling of responsibility (CRa, 2020b; RLI, 2020; SER, 2021).

Research on food production in wet peatland repeatedly leaves out the interest of different stakeholders, even though many investigations underpin the importance of creating shared responsibility among stakeholders. Only a few studies in Germany take into account the role of different stakeholders in the implementation of paludiculture (Deickert & Piegsa, 2016). They show that the involvement of the surrounding communities as well as the stakeholders in the supply chain is crucial. However, these studies again mainly focus on the biomass applications of paludiculture. Accordingly, there is a need for studies that investigate what role different stakeholders have in achieving a transition towards sustainable food production in rewetted peat meadows.

3.2. Ecosystem service governance

What becomes clear is that alternative scenarios of food production on rewetted peat lack a business model, are surrounded by many uncertainties, and require governance arrangements that enable successful cooperation among large sets of stakeholders. Top-down forms of governance do not seem fit to tackle these challenges. This limitation falls within a broader shift from a state-driven government to a multi-actor form of governance (Van Kersbergen & Van Waarden, 2004). Traditional state bodies have encountered difficulties in top-down steering of society due to the complex transboundary and diffuse nature of politics (Gerlak et al., 2012). Simply imposing strict rules and regulations in peat meadow areas will not make alternatives more attractive and citizens more satisfied with changes in the landscapes. It requires, apart from rules and regulations, the cooperation of farmers, governmental bodies, entrepreneurs, citizens, and actors within the whole supply chain.

This process of steering society is captured within concepts like collaborative, community-based, and participatory governance in which actors from state, market, and civil society cooperate (Sattler et al., 2018). Supposedly, these forms of governance are more capable of managing ecosystem services, as they are more responsive and adaptive to local context and priorities (Scott, 2015; Van Bussel et al., 2020). Collaborative forms of governance are often seen as more efficient in finding a long-term solution, as the stakeholders, that are responsible for implementation and affected by the outcome, are already included in the decision-making phase (Emerson et al., 2012; Gerlak et al., 2012).

Collaborative, participatory, and community-based governance, even though each term emphasizes a different aspect, seem to describe a similar trend of governance, consisting of the participation and collaboration of different stakeholders designed towards solving societal issues that a community is faced with (Sattler et al., 2018). Collaborative governance is mainly concerned with cooperation between different actors (Emerson et al., 2012). Participatory governance is focused on the inclusion and engagement of actors, especially the ones that are normally underrepresented (Newig et al., 2018). Whereas community-based governance captures the previous two forms of governance and applies them in a local setting (Sattler et al., 2018).

For the sake of simplicity, in the remainder of this thesis, I will refer to community-based governance (CBG*) as a form of governance that centers around a collaborative process that includes different stakeholders in a local setting and aims to solve an issue of governance*. CBG was chosen because it captures both aspects of collaborative and participatory governance and it resonates the most with the type of process that is needed for the successful implementation of sustainable food production in the Vrouw Vennepolder and peat meadow areas in general.

3.3. Challenges of community-based governance

CBG encounters many challenges. According to Sattler et al. (2018), four types of challenges are often encountered. These are heterogeneity of actors, diversification of knowledge, different prioritizations, and the need for adaptivity and reflexivity. These challenges seem to apply to the problem of subsidence, which deals with many actors with diverging interests, opinions, and knowledge. Besides, it requires adaptability and reflexivity of governance policies and structures, due to the many unknowns of a transition to wet agriculture. How to address these challenges is a major issue for the successful implementation of wet agriculture in peat areas.

According to Bussel et al. (2020), CBG can provide an opportunity as well to solve those challenges. A citizen's panel used for the implementation of paludiculture in West-Pomerania in Germany showed that citizens possessed in-depth knowledge of their region and were able to provide creative solutions (Deickert & Piegsa, 2016). On the contrary, local communities and governments are sometimes limited in their capabilities and lack specialized knowledge of subsidence to be capable of addressing the issue adequately (RLI, 2020).

Collaborative forms of governance are not always perceived to have a positive effect on the environment (Gerlak et al., 2012). Many mechanisms influence the outcome and effectiveness of these governance processes (Emerson et al., 2012; Newig et al., 2018). The frameworks developed by Emerson et al. (2012) and Newig et al. (2018) provide insights into which factors contribute positively and negatively to the environmental outcome of CBG. Both frameworks describe a range of mechanisms and aspects that determine the composition, process, outcome, and impact of collaborative governance arrangements. The core of these governmental arrangements centers around what Emerson et al. (2012) call 'collaborative dynamics'. Which include the process of decision-making as well as the collective action that is taken. Both frameworks provide mechanisms for different stages of the process. During each of these stages, there are mechanisms that both positively and negatively affect the output and the final standard of the environmental performance (Newig et al., 2018).

Literature on stakeholder collaboration and collaborative governance is already comprehensive about what the most decisive factors are. However, so far, no study has looked into what factors and mechanisms influence collaboration in peat meadow areas in the Netherlands. Yet collaboration between stakeholders is essential for a transition to producing food sustainably. Consequently, peat meadow areas in the Netherlands could benefit from well-functioning CBG. Achieving this requires knowledge on what factors regarding stakeholder collaboration are necessary for the CBG model to enable a transition. Therefore, the remainder of this thesis will focus specifically on determining these success factors for collaboration among stakeholders dealing with subsidence and enabling a transition.

4. Theoretical Framework

To assess the mechanisms that determine the success of the CBG model a theoretical framework is needed. Based on the literature I constructed the following framework. It consists of six categories: (1) initiation and context, (2) participants, (3) type of activity, (4) communication, trust, and rules, (5) leadership, knowledge, and resources, and (6) transition management. The first three categories focus more on the initiation and the design of the CBG process. The fourth and fifth category center around the collaborative dynamics and the role of different resources that are necessary for CBG and the sixth category focuses on what is needed from CBG to enable a transition.

4.1. Initiation and context

CBG arrangements are initiated often either top-down or bottom-up (Newig et al., 2018). In top-down initiation, a governmental body starts the collaboration and finds relevant parties. This can lead to strong formation and formalization of collaboration, as governments can provide resources and expertise. Bottom-up refers to grass-root organizations that take the lead in the formation of CBG. Grass-root organizations have better local ties and therefore improve acceptance and compliance in a given community. Emerson et al. (2012) mention that leadership as well can lead to initiation and can motivate other participants to collaborate. Moreover, collaboration is initiated when there is uncertainty about an issue or when a consequential incentive rises due to a need for collaboration, such as a crisis. Most often collaboration is initiated because, to some extent, actors are dependent on each other's cooperation. What is crucial is that collaboration is always born out of a social, legal, political, and or local context (Bryson et al., 2006; Emerson et al., 2012). These environmental factors, from the onset, continue to shape how collaborations develop. For example, a previous history of collaboration can determine at the beginning of a CBG arrangement the level of trust between participants. These contextual factors play a role in each stage of the process from initiation until the outcome of CBG, which makes it a crucial element.

4.2. Participants

Newig et al. (2018) describe in their framework how the inclusion of different participants can affect the outcome of collaboration. An open decision-making process allows everyone to voice their opinion which improves its legitimacy. This, however, increases the chance that a process will be stagnated or distorted by the dominance of certain involved groups. Participants can also be selected to ensure an even representation of perspectives. Such an inclusive process is more balanced and can be more effective than open processes since well-resourced groups are less likely to dominate the process. Participants' commitment, trust, understanding, and communication increase when the process of inclusion is controlled in a selective and inclusive manner (Johnston et al., 2011). These factors together with participants' motivation and eagerness have a positive effect on the collaboration and its outcome (Newig et al., 2018). Finally, participants must be included already in the early stages and continue to be part of the process to avoid that stakeholders get frustrated or conflict arises because decisions already seem to be made. This is said to lead to better and more long-lasting decisions (Reed, 2008). It corroborates that stakeholders are empowered and in control of decision-making. Empowerment is another important aspect when designing the method of engagement and needs to be adapted to local context and the level of skills of the participants involved (Reed, 2008).

4.3. Type of activity

Each CBG project engages in different types of activities. Some center around the process of decision-making or planning of an issue. Other processes are more action-based and in charge of the management and implementation of decisions. Scott (2015) finds partial evidence that collaboration in charge of management leads to more responsibility among stakeholders than decision-making-based collaboration. He argues that when stakeholders engage in the management of an issue they tend to share more power and knowledge and commit more time and investment. This increased collaboration allegedly leads to better environmental outcomes (Emerson et al., 2012; Newig et al., 2018; Scott, 2015). CBG can also differ in the extent to which actors become

engaged. This is expressed by the 'ladder of participation' which indicates the different levels of engagement between the state and other actors (Arnstein, 1969). Many have tried to categorize these different forms of engagement that range from a mere passive and consultative to an active and collegial role (Reed, 2008). The level of engagement of stakeholders could have different effects on the successful outcome of CBG. However, it is not always evident that when participants acquire a higher position on the 'ladder', this directly means better results. Moreover, participants can have varying perceptions of the position they hold on the ladder, which can lead to confusion and conflict (Vandenbussche & Eshuis, 2018).

4.4. Communication, trust, and rules

Communication and deliberation are often mentioned in the literature as the cornerstone of collaboration (Emerson et al., 2012). Ostrom (1990) mentions communication as one of the most elementary strategies in tackling the tragedy of the commons and governing public goods. More communication and bargaining among participants in an open dialogue leads to better identification of mutual gains and thus enhanced environmental outcomes (Newig et al., 2018). Social learning and social ties among stakeholders happen when communication increases (Teodoro et al., 2021). Deliberation in a principled manner also leads to better identification of a common goal, a shared feeling of purpose, and a shared theory of action (Emerson et al., 2012; Newig et al., 2018). However, veto-players, such as landowners or commercial parties, can alter the quality of deliberation and distort the process leading to less environmentally preferred outcomes.

Increased communication leads to trust between participants, but trust also works the other way around: high levels of trust among participants improve the quality of the dialogue (Emerson et al., 2012). Leach and Sabatier (2021) explain that trust is especially built through the application of legitimate and fair processes, rather than the previous history of agreement. It creates a safe space in which participants are comfortable to express their opinions and concerns. This increased information enables a mutual understanding between stakeholders and that in turn leads to respect of the adversaries interest and opinion. The development of mutual understanding leads to the identification of mutual gains and a sense of shared ownership of the process (Ansell & Gash, 2008). Reciprocity in networks of stakeholders is another important factor that plays a key role in the development of mutual understanding and mutual respect (Teodoro et al., 2021). Teodoro et al. (2021) show that social learning in networks of stakeholders improves when participants feel respected and respect others in the network.

The application of rules and procedures in CBG arrangements increases the perceived fairness among participants and the acceptance of the decision (Newig et al., 2018). This can include ground rules, operating protocols, and decision rules. Longer duration of a collaboration often requires a more explicit formalization of rules and objectives into charters and regulations and the institutionalization of the collaborative process (Emerson et al., 2012; Reed, 2008). Formalization of these institutions can lead to better collaboration between stakeholders as goals become more specified. Formalization is often accompanied by a more professional organization through adopting coordinators (Scott, 2015).

4.5. Leadership, knowledge, and resources

Leadership is one of the elements that is perceived to increase the capacity of CBG to act (Emerson et al., 2012). Certain actors can perform the role of leader and motivate others to become engaged and collaborate more in-depth. These actors can be individuals or organizations that show leadership through their behavior. Roles of leadership can take many forms as well. Some can take the form of a sponsor, others take the role of a facilitator or organizer. In any case, leadership pushes these processes further and can happen at each stage of collaboration (Emerson et al., 2012). Additionally, in each stage of the process, different types of leadership can be required to initiate, make decisions, think outside of the box, execute plans and adapt to unexpected circumstances (Termeer et al., 2013).

Knowledge exchange and development is another important part of creating joint capacity to act. The inclusion of many different fields of practical, indigenous, and theoretical knowledge is said to improve the outcome of the process, by strengthening the knowledge base and increasing environmental performance (Emerson et al.,

2012; Newig et al., 2018). When participants learn and increase their independent knowledge during the process this makes implementation easier (Plummer et al., 2017). Scientific knowledge and local knowledge needs to be integrated to make sure that there is not a bias towards either source of knowledge when a decision is made (Reed, 2008). Therefore, the overall success of CBG is dependent on the free flow of knowledge made available by and to participants. Also, when participants are made aware of the needs of policymakers and the level of strategic thinking that is required, they are expected to form less of a barrier for implementation (van der Linde et al., 2020). This connects to the idea that stakeholders need to be empowered to become engaged in the process (Reed, 2008). Creating a level playing field to tackle power imbalances can be achieved through knowledge sharing, but can also be designed in creative ways by going out into the field or landscape (Prell et al., 2007).

Finally, accumulating the required resources is a necessary component to bring about the capacity for CBG to act. Resources, not only include financial resources, but also time, skills, and expertise. The more resources CBG can accumulate, the easier it becomes to attract stakeholders. It can also have an impact on the formalization of collaborative arrangements, as they can get professional support by hiring a coordinator or independent expert knowledge (Emerson et al., 2012; Reed, 2008; Scott, 2015). Reed (2018) sees skilled facilitating as an essential ingredient for collaboration, as conflicts are highly likely to occur.

4.6. Transition management

It has been challenging to understand whether the collaborative actions taken lead to actual impact and improved environmental performance. Mainly because varying definitions exist in the literature of what impacts mean. Emerson et al. (2012) refer to them as: "*Intentional (and unintentional) changes of a state **within the system context**; they are alterations in a pre-existing or projected condition that has been deemed undesirable or in need of change*" (p.18). However, many current sustainability problems inherit an element of transition, such as the energy transition or food transition, and therefore require changes outside of the system context (Markard et al., 2012). Historically, transitions often happened at a slow and voluntary pace or accelerated only when there was a crisis (Sovacool, 2016). Nowadays, there is a need to speed up the pace of transitions. This requires an understanding of the way transitions occur. According to Geels & Schot (2007), a transition means a change from one socio-technical regime to another. Social technical regimes consist of cognitive routines that define technological as well as social limits and thereby determine current systems. These are contested by novelties and innovations that come from niches (Geels & Schot, 2007).

The theory of anchoring provides three strategies that are important for governance to set in motion a transition by linking novelty from niches into the regime (Elzen et al., 2012; Tittonell et al., 2016). A first strategy is cognitive anchoring which refers to the changing of people's mindsets, beliefs, and knowledge, leading to the reformulation of the dominant problem definition. It can be expected that cognitive anchoring increases when there is an open dialogue and different sets of knowledge are included in CBG arrangements. A second strategy is network anchoring which creates change into the regime by building networks of people and organizations that propose alternatives to current pathways. Leadership has been mentioned previously as a way to build new networks by motivating parties to engage. Additionally, adequate resources are needed to build and maintain networks such as organization and financial budget. The third strategy is institutional anchoring which refers to the process of grounding change by evoking new norms, rules, and regulations. Changes in institutions are mostly made on a national or international level. Consequently, institutional changes are hard to make for CBG (Buizer et al., 2016). Besides, local initiatives are often more integrative compared to the sectoral perspective that national ministries attain (Buizer et al., 2016). This further problematizes the ability for CBG to anchor change institutionally, because of a mismatch between local and national approaches.

These three strategies need to occur simultaneously to enable regime change because there are feedback loops and interdependencies between them (Elzen et al., 2012). Moreover, these three elements of anchoring find resonance in the literature review on agricultural transitions of Melchior and Newig (2021) that give concrete

points for governance action, such as reforming policy, increasing knowledge exchange, fostering collaborative governance mechanisms, and building local and alternative networks.

Overall this theoretical framework has given insight into what factors and mechanisms determine collaboration between stakeholders. These factors and their effect are summarized in table 1. What stands out is that all factors to some extent try to achieve mutual gains and common ground. This process is presented as the way to get to improved environmental performance and legitimacy of governance. Especially the 'collaborative dynamics' are crucial factors that determine the collaborative process. Additionally, the theory on anchoring provides some initial theoretical steps to understand what factors within stakeholder collaboration are important to enable a transition. However, in general, the theory on collaboration is limited in its ability to identify factors that are important for collaborating within the context of a transition. Collaboration, that faces change outside of the current system boundaries, is extremely difficult, because of the many uncertainties and the difficulty of crystalizing mutual gains and common ground. Therefore, there is a need to reconsider these theoretical building blocks to improve the understanding of collaboration between stakeholders dealing with a transition.

TABLE 1. MAIN FACTORS AND SUBFACTORS OF STAKEHOLDER COLLABORATION ACCORDING TO THE LITERATURE

Main factors	Subfactors	Effect/Outcome
Communication	Bargaining	- Identification of mutual gains
	Open dialogue/deliberation	- Identification of mutual gains - Common goals - Shared theory of action - Trust among parties
	Reciprocity	- Establishment of social ties and social learning
Trust	Safe space	- Improves quality of the dialogue - Increased information sharing
	Mutual understanding	- Mutual respect - A shared feeling of ownership - Identification of mutual gains
	Legitimate and fair processes	- Creates trust
Rules and procedures	Formalization of rules	- Increases the perceived fairness - Increases acceptance towards decisions
	Formalization of objectives	- Increases commitment and collaboration
	Coordinators	- Improves organization of a collaboration
Participants	Open selection	- Improves legitimacy - Increases chance of stagnation and distortion by dominant groups
	Inclusive selection	- More balanced representation - Less likely to be distorted by dominant groups - Increases trust, commitment, and communication
	Veto-players	- Stagnates and distorts the process
	Motivated participants	- Increases commitment and improved outcome
	Leadership	- Increases capacity to act - Build new networks and structures - Thinks outside of the box - Adaptivity
Resources	Knowledge	- Strengthens knowledge base - Increases the capacity for joint action - Increased learning among participants - Integration of knowledge fields - Creates a level playing field between all participants
	Time	- Increases ability to build relationships and trust
	Financial resources	- Increases ability to act - Increases professionalization
	Organizational resources	- Improved coordination and organization - Conflict management
Type of activity	Managing	- Increases sharing of power and knowledge - Increases commitment and time investment
	Decision-making	- Increases legitimacy
Initiation	Leadership Context/Environment	- Motivate participants to collaborate - Leads to a need for collaboration - Determines playing field of collaboration in each stage
	Top-down	- Strong institutionalization of collaboration - Provides resources and expertise
	Bottom-up	- Improved local ties - Increased acceptance and compliance with the outcome
Consensus	Common goals	- Increases chance of taking collective action
	Shared theory of action	- Increases the impact of collective action
	Specified targets	- Increases attainment of desired impacts
Anchoring	Institutional anchoring	- Leads to institutionalization that consolidates novelties
	Cognitive anchoring	- Leads to new mindsets, ideas, and technologies that challenge regimes
	Network anchoring	- Leads to networks that seek towards changing the regime

Source: Author's composition

5. METHOD

To answer the main research question a stakeholder analysis was executed for the case of the Vrouw Vennepolder and experts, within projects surrounding the issue of subsidence, were interviewed. This allowed for the application of the theoretical framework as well as the critical evaluation of it. Through this method, the framework is critically discussed and additions are made to improve the theoretical framework's understanding of what factors are important for collaboration within a transition.

5.1. CASE DESCRIPTION

The Vrouw Vennepolder is a diked marsh north of the city Leiden in the village of Oud Ade. In 2020 Land van Ons (LVO) bought the northern part of the area consisting of 32 hectares. LVO is an organization that aims to increase biodiversity on agricultural soils by buying pieces of land and renting them to farmers that are willing to farm under the conditions that LVO adheres to. This among others means no use of artificial fertilizer, increased grazing, and decreasing the frequency of mowing. The organization consists of members that buy a piece of land. Currently, the organization has over 11.000 members and owns 8 different plots in the Netherlands.

The plot in the Vrouw Vennepolder is situated on peat soil. Therefore, this plot is dealing with subsidence. In the area, the soil sinks on average 5 mm a year. Biodiversity cannot be restored here without rewetting the peat layer of the soil. LVO has asked the Institute of Environmental Sciences (CML) at Leiden University to start a long-term research project on the plot. Also Holland Rijnland, an intergovernmental collaboration between thirteen municipalities in the area, became part of this project as they have an interest in dealing with subsidence in the area and how this could be combined with a business model.

The research project addresses several challenges. First of all the decline of biodiversity and subsidence, but also the growing gap between rural and urban areas, climate change, and the need for a future-proof agricultural model. The project will be divided into three phases. The first phase (year 1-3) is the proof-of-principle phase in which four different forms of land use will be experimented with. In the second phase of implementation (year 3-8) other areas and farmers in the region will be involved to implement some of the experiments on their land. Finally, in the third phase (year 8-10) the research needs to serve as a source of inspiration for other peat areas in the Netherlands and North-western Europe.

5.2. STAKEHOLDER ANALYSIS

The stakeholder analysis aimed to investigate the different perspectives of stakeholders within the project of Land van Ons in the Vrouw Vennepolder. This investigation aimed to show what is needed from CBG and how collaboration between stakeholders should take place in the future phases of the project to establish a transition towards sustainable food production in the Vrouw Vennepolder.

First of all, stakeholders were identified. Important, in this stage, was to define what a stakeholder is. This is often missing in other stakeholder analyses (Bendtsen et al., 2021). In this research, stakeholders are defined instrumentally. As stakeholders will be included on the basis that their involvement is important for the successful outcome of the project. This deviates from the normative view that every social entity that has an interest or is affected by the outcome is perceived as a stakeholder (Miles, 2017). However, the distinction between normative and instrumental is not dichotomous but rather continuous. The process of stakeholder selection is a precarious task and it is important to be aware of the powerful position to grant some social entities the status of stakeholder (Colvin et al., 2016). The status of stakeholder can often provide an opportunity to become engaged. Therefore stakeholders were only included when they were already part of the project or other stakeholders indicated that they were important stakeholders to include.

The process of selection started by making an inventory of all the stakeholders that were already engaged within the project. Additional stakeholders were found through snowball sampling, by asking stakeholders who they think should be included in the stakeholder analysis to make a transition towards sustainable food production

possible. Table 2 in the results section shows the final list of all included stakeholders. The stakeholders included in the list are selected based on the criteria that they were mentioned by at least one other stakeholder as having an important role in establishing sustainable food production in the Vrouw Vennepolder. Only consumers, market actors (like restaurants and shops), and the Ministry of Agriculture, Nature, and Food quality were not interviewed. This was due to the time limit and respondent availability. To get a clear view of consumers and market actors a large sample was needed, for which there was limited time. These stakeholders were analyzed through a collection of scientific papers and grey literature (see appendix 10.5).

5.2.1. DATA COLLECTION AND ANALYSIS

In total 15 stakeholders were interviewed through the use of open-ended semi-structured interview questions (See appendix 10.4 for questions). All interviews were recorded, except for 1 interview due to technical issues, which was excluded from the analysis. The topics, that guided the formulation of interview questions, were chosen based on the literature and after consulting two researchers from CML that were involved in the project in the Vrouw Vennepolder. The most important elements that were asked during the interviews were stakeholders' interest, motivation, role, possible contribution in the transition to sustainable food production, and their ideas on how to achieve a transition to sustainable food production and future business models. Respondents were also asked how they experienced the collaboration among all stakeholders and how this could be improved. On top of this, an important element of the interview was asking stakeholders how they viewed the future landscape of the Vrouw Vennepolder. Two extreme opposites were presented: An agroforestry and paludiculture landscape with wet pastures and perennial crops and at the other opposite rich herbal pastures. Respondents were asked what their opinions were on either opposite and whether they thought these landscapes could be realized in terms of a business model and the effect on the local landscape. This resulted in an overview of how different stakeholders view the landscape and what they value as important to them.

Additionally, two stakeholder meetings in the project of the Vrouw Vennepolder were attended. One meeting consisted of LVO, CML, Holland Rijnland, scientists, experts, and bird meadow conservationists from the area and a second meeting was with the LVO, CML, the mayor, local council members, and councilor. Both meetings consisted of a small presentation of the project and a discussion afterward. A report was made for further analysis of these meetings. These reports gave additional insights into stakeholders' perspectives on the project and challenges that arise when dealing with stakeholder meetings. Results from the interviews, stakeholder meetings, scientific and grey literature were transcribed, coded, and analyzed. The transcriptions were analyzed by coding text into stakeholders' interest, their attitude towards the project, role, motivation, perceived challenges, and their perspectives on the landscape and business models. The stakeholder analysis resulted in an overview of the different general perspectives on the future landscape and sustainable food production in the Vrouw Vennepolder (see appendix 10.5 for a complete overview).

5.3. EXPERT INTERVIEWS

In the second part of this research, an investigation was carried out in other cases in peat meadow areas to identify what positive and negative factors have contributed to stakeholder collaboration. This served three aims. First, it allowed a comparison to be made with the previous theory. Second, it contributed to the validity and credibility of the research by applying a triangulation of both theoretical and empirical methods. Triangulation seeks to overcome intrinsic biases and weaknesses of the research by combining multiple research methods. Third, it provided valuable insight for the project in the Vrouw Vennepolder and CBG in general on how to improve the process of stakeholder collaboration.

The projects, that experts were involved in, have been selected through purposive sampling. Cases were selected on the basis that they exemplified the characteristics of the problems with rewetting of peat meadow areas. In particular, the research has focused on projects that have included or affected several stakeholders over a period of time. Different projects have been selected from different regions and contexts in North-western Europe to ensure representativeness. North-western Europe shares geophysical similarities and challenges concerning peat

oxidation. Therefore, in light of the European CO_2 reduction targets, these countries face similar problems. Although representativeness was not entirely achieved due to the lack of cases outside the Netherlands, Germany, and Poland. In total, 19 experts have been interviewed, whom consisted of policy-makers, scientists, civil servants, and private sector employees.- The final selection of projects can be found in table 3.

5.3.1. DATA COLLECTION

The method that was used, for the collection and analysis of expert interviews, is based on the hermeneutic research method. This method assumes that there is no unique and single understanding of the social world. Collaboration is viewed in this research as a phenomenon that is socially constructed. Every research, therefore, explains phenomena from their interpretation of the social world. Hermeneutic is applied to human-constructed text. Interpretation of the text is given by studying its part, and its parts are interpreted by relating it to the whole text (Alvesson & Sköldberg, 2017). The first initial step in the hermeneutic method is collecting theory from the literature to show how concepts have been understood and interpreted before (Breeman, 2015). Secondly, the researcher inductively collects and analyses qualitative data to create an understanding of the phenomena under investigation. Finally, the researcher relates the findings to the literature and indicates where it overlaps and where the literature falls short, to ultimately create new interpretations. This method was chosen since it best fits the aim of this study. Even though the literature is comprehensive on factors that determine collaboration, no study has looked into the particularities of subsidence and the role of collaboration in setting in motion a transition. To avoid that the established theory and previous interpretation would steer the analysis, an inductive data approach to collect and analyse data was more appropriate.

Non-directive and semi-structured interviews with open-ended questions were used to collect data. Non-directive interviewing avoids asking leading questions and lets the interviewee take the lead. This leads to the validity of the research since the researcher takes an observant role. This method allowed for the identification of patterns across the interviews, while at the same time allowed investigating particularities of individual cases (Bryman, 2016). The interview questions were developed following an inductive approach. This meant that mainly explorative and open-ended questions were used instead of closed questions. The questions were formulated to fulfill the research objective which was to identify what positive and negative factors have been within cases in peat meadow areas (a final list of questions can be found in appendix 10.3). The reason for this choice is that this gives a better representation of what respondents think is most important. Otherwise, there is a chance that an echo chamber will be created with what has already been stated in the literature. Moreover, the focus of this study was to identify factors that contribute specifically to collaboration in peat meadow areas. An inductive approach is, therefore, better applied to this aim. All interviews took place online and interviews were recorded. Each participant signed a consent form for the use of their data (see appendix 10.2).

5.3.2. DATA ANALYSIS

To analyze the expert interviews all data were transcribed and coded. The coding of interviews allowed for a qualitative analysis of the interviews. The downside of this is that qualitative analysis is harder to replicate and allows for bias of the researcher. On the other hand, qualitative analysis allows a more in-depth analysis of the findings and the researcher can better interpret the answers from the interview, which is an important aspect of the hermeneutic method. By using a systematic coding strategy the bias of the researcher is sought to be minimized and the replicability is maximized.

Interviews have been coded following an axial coding method using coding software NVivo. Axial coding consists of three stages (Simmons, 2019). In the first stage, all relevant texts are coded into detailed and specific codes (open coding). In the second stage, these codes are grouped into categories (axial coding). Finally, main themes are sought to capture different categories (selective coding). This is an iterative process in which the researcher constantly reinterprets codes and checks with the transcriptions whether themes and categories are representative of the interviewees' statements. The researcher consistently aims to keep in mind to what extent codes help answer the main research question, which contributes to the validity of the research.

In this case, the first step of initial coding concerned identifying all possible factors that were said to influence the collaboration within the project. Secondly, these codes were organized into categories. In this stage, it was identified whether these categories could be linked to the concepts that have been discussed in the theoretical framework. The empirical findings were related to theory, by comparing what interviewees said with the insights from the theoretical framework. This allowed analyzing what the similarities with the literature were and which factors were different from the literature and might be specific for the case of subsidence.

The final codebook consisted of 6 overarching themes, and 28 categories (see appendix 10.6 for the codebook). For each code was counted in how many interviews they were present and how often they were mentioned. This can be seen as an indicator of relative importance. However, caution should be applied here. These quantitative indicators are presented in the result section, but it is not intended to depict the image that one factor is necessarily more important than others because of its quantitative dominance.

6. RESULTS

6.1. STAKEHOLDER ANALYSIS

This section presents the results from the stakeholder analysis in the Vrouw Vennepolder. First, it provides a list of stakeholders included in the analysis (see table 2). Second, the most prominent differences in stakeholder's perspectives are discussed regarding the main topics asked within the interviews: landscape, business models, and transitions. These stakeholder perspectives helped to understand what perspectives stakeholders have within the project and show the challenge that the project will face in the future when it has to collaborate with these stakeholders.

TABLE 2. LIST OF STAKEHOLDERS IN THE VROUW VENNEPOLDER

1.	Land van Ons
2.	CML (Leiden University)
3.	Hoogheemraadschap van Rijnland (waterboard)
4.	Holland Rijnland
5.	Municipality Kaag en Braasem
6.	Tenant (future land manager/farmer)
7.	Meadow bird conservationists
8.	Neighboring residents
9.	Local residents
10.	Conventional farmers in the area
11.	Province of South Holland
12.	Rabobank
13.	Innovative farmers in the area
14.	Ministry of Agriculture, Nature, and Food Quality
15.	Consumers
16.	Market actors (supermarkets, local shops, and restaurants)

6.1.1. STAKEHOLDERS' ATTITUDE TOWARDS THE PROJECT AND THE LANDSCAPE

Generally, stakeholders in the Vrouw Vennepolder had a positive attitude towards the project and had the feeling that other community members were enthusiastic as well. The local community felt a sense of pride that this is happening in their area. A few innovative farmers in the area saw the project as an interesting development to follow and were eager to know if they can apply the results from the research on their land. This group of farmers was aware of the issue of subsidence and open to ways of reducing it. One farmer expressed that: "*it is interesting to see what we can do about subsidence and I see it as a nice challenge*." The project results will not completely change their farm, he underpinned: "*In our core, we are a cheese and dairy farm, we have some space for experimentation, but that is not endless*."

Especially the innovative farmers, CML, and to a certain extent also LVO were more open to changes in the landscape. They did not think that agroforestry is likely to become part of the area's future landscape, but they were more open to other uses than grassland. According to them, the landscape is always in motion: "*This area used to be a swamp, now it's a polder and in a few hundred years it might be a forest. The fact that the landscape changes is the only constant thing*." Also protecting meadow birds only by protecting the landscape was not seen as the most sensical, because these stakeholders indicated that climate change in the coming decades might not make this a suitable habitat anymore for these species.

Meadow bird conservationists adopted a more critical stance. They were afraid that the open landscape will disappear: "*because this is meadow bird habitat, when you place a tree or a shrub you scare them away, as they are afraid of predators*." However, they agreed with the project that the current monocultural landscape is undesirable: "*it is a green desert, English ryegrass and manure with no meadow birds to be found*". Conservationists preferred the project to focus more on the protection and restoration of bird habitat instead of innovative experiments with paludiculture and perennial shrubs. One interviewee claimed that: "*there is a longing to the peat meadow landscape of 1925 with flower-rich hayfields with buttonweed, ragged robins and birds like skylarks, black-tailed godwit and redshanks*". In their eyes conservation could be combined with raising the water table and providing a business model to farmers. Therefore, they thought that the project should '*restrict itself to a single or a few experiments*" that have a large chance of success instead of experiments: "*that are doomed to fail*."

The most negative attitude was expressed by one of the conventional farmers in the region, who represented the view of a larger group of conventional farmers in the area. According to him:

"*Many farmers already farm sustainable and future proof, when you look for example at the number of farmers that want to place solar panels or build a small windmill, but it also all has to be financed. We are in a situation in which more production means more income. You have to get a certain revenue to make a profit. We still get the same price for our milk as twenty years ago, but our cost has risen strongly. So it is not as easy as everyone thinks. All those members from Land van Ons that pay ten euros and think that they can farm future proof, well I think they will be disappointed soon. It is a nice plan, but the reality is very difficult.*"

Most stakeholders agreed that there is a need to raise the water table to stop subsidence. Except for the group of conventional farmers that stated that:

"Raising the water table that means cleaning up the agricultural sector. Then you can't do anything anymore. Cows cannot go in the field because they mess up the grass. And that is why you become a farmer because you love to work with animals. *So that is no solution in the end. We are very good at technological innovation so we should focus on that. "*

Conventional farmers in the area strongly valued the current open landscape as it is. They opposed the idea of having agroforestry or perennials growing in the area. According to them the open grasslands with meadow birds and beautiful long views is what people want: "*The majority of the locals view the farmed landscape as nature and people want to cycle along with the cows instead of peat mosses*." A survey performed by the municipality showed that 77% of the local respondents indeed view the grassland with cows as nature (Gemeente Kaag & Braasem, 2020). However, 70% of the respondents agreed that if it benefits nature the landscape can be more wild and disorderly.

Most government actors like the municipality, Holland Rijnland, and the Province of Zuid-Holland agreed that the characteristic landscape should be protected, however, they acknowledged that with the scarcity of land this is not always possible and desirable. They positioned themselves between the conservative stakeholders that want to conserve the landscape and the innovative stakeholders that are open to changes.

6.1.2. VIEWS ON BUSINESS MODELS

Stakeholders in the Vrouw Vennepolder had diverging views on what business model would work best. Clear preferences for a single model were not made explicit except for the group of conventional farmers who essentially want to remain 'business-as-usual'. This is a business model that maximizes the production of high-quality and affordable goods. These farmers represented a traditional view on business models that are market and production-based. They claimed that: "*People take the availability of food for granted. There are groups in society that want to make food more expensive, but not everyone can afford that*." This group believed that

business models should be realistic. Accordingly, a farmer said that: "*We live in a country that is in the EU in which we have a free market and that is something that you will have to deal with*."

LVO on the other hand had a preference for a business model that moves away from a market and production-based economy to a business model that also aims to provide ecosystem services. Preferably it should develop local food chains with high-quality regional products, that bring people more in contact with the origin of their food and narrows the gap between urban and rural realities. As someone from LVO pointed out: "*When you ask a small child where vegetables come from, they say out of a can*." By removing actors along the supply chain, farmers can claim a bigger portion of the price. Additionally, prices can be higher, since LVO was convinced that some consumers are willing to pay a higher price for products with a transparent and sustainable message.

Some stakeholders wanted to look especially into business models that are based on the payment of ecosystem services and find local food supply chains less innovative. An example of ecosystem service payments is when the waterboard pays farmers for providing services, such as storing or retaining water. Apart from food, farmers are then paid by society for the benefits they provide to society. Some stakeholders, like the Rabobank, believed strongly in the power of the market and that these should be used to their full ability. They stood in between the previously mentioned views, since they did believe in more innovative business models, but thought that the free market is the best way to deal with it. Their preferred business model was a carbon credit that farmers can sell when they store or accumulate carbon on their farms.

6.1.3. TRANSITION, DIVERGING INTEREST, AND MUTUAL GAINS

What separated most stakeholders is how they viewed the role of a business model in a transition. During one of the stakeholder meetings, two opposing views became clear. On the one hand, the idea was that to enable a transition, a clear business model is needed that is proven to perform well and offers an attractive perspective. According to one of the farmers, just experimenting with new cultivation methods is not enough to establish a transition: "*when you want other farmers to copy it then you need a full and ready package that is proven and shows exactly which investments you need and what the results are*." Correspondingly, a local citizen mentioned that: "*historically farmers in this area have always changed whenever they saw a better business model, for example when they went from harvesting strawberries to flower bulbs*". Yet others saw a transition as a search towards something new and unexpected. A new business model is something that has to take shape along the way and is not possible to define clearly beforehand. They claimed that: "*To execute an experiment you don't need a transition, but for a transition, you need someone to start experimenting and pioneer*."

Sub-interpretation:
This shows the difficulty of collaboration between stakeholders in this project, since collaboration is not taking place in a regular setting, but in light of a transition. As the literature points out, for collaboration reaching mutual gains is necessary, but in a transition mutual gains are initially hard to assess and only become clear when ideas become crystalized. This uncertainty will remain a struggle throughout the project. Seeking a balance between the search for a transition with lots of unknowns, uncertainties and experiments and on other hand trying to stay realistic and offer a business model for farmers that is workable and reliable. Overcoming this challenge requires a strong sense of trust between stakeholders that need to form strong ties even when experiments do not work out or when prospects turn grim. Those moments will occur and only then collaboration will be put to the test as true interest and opinions become crystalized**.**

Often stakeholders mentioned that doing research, innovating, and managing a farm can contrast:

"Experiments take place in a scientific context, so you need to consider that. When you notice within two years that something is not working you want to stop the experiment, but for scientific results that is not always an option. You have to consider this when making a plan."

Governments also need to show that they are performing and that government spending is used wisely. This requires that results are reported in time and are useful for implementation in other areas. This does not combine well with doing research or experimenting, since experiments and research can go wrong and can take longer than expected. The same accounts for LVO. Eventually, they want the experiments in the Vrouw Vennepolder to result in a business model for a farmer. The fact that so many stakeholders are involved with different interests complicates the identification of mutual gains and therefore the collaboration. As somebody from the waterboard said: "*This is playing chess in three dimensions simultaneously, but finding mutual gains is the only way forward*." The waterboard, therefore, advocated using a mutual gains approach that focuses on identifying stakeholders' interests and making them explicit to improve the identification of mutual gains. This helped the waterboard in previous collaborations with large sets of stakeholders.

6.2. EXPERT INTERVIEWS

Other cases in peat meadow areas have faced similar challenges in collaboration with stakeholders. The interviews with experts from different projects have led to the identification of several factors regarding the collaboration between stakeholders. The identification of clear all-encompassing positive and negative factors has been difficult for these projects. This partly had to do with the varying nature of these projects that performed on different geographical scales, included different sets of stakeholders, and differed in their aims (see table 3). This naturally resulted in different working methods and collaborative dynamics. The presentation of the results tries to focus on the broader emerging themes in the interviews and where possible tries to be specific and in-depth. In any case, the results showed how context-dependent collaboration was and how difficult it was to design the process correctly. The previously developed theoretical framework to a large extent provided explanations why collaboration worked well or not. However, some emerging themes from the interviews gave indications for alternative explanations that deviate from the theory. In the following sections similarities and differences for each theme are discussed.

TABLE 3. LIST OF ORGANIZATIONS AND PROJECTS INTERVIEWED (BY COUNTRY AND TYPE OF ORGANIZATION)

Country	Type of Organization	Organization	Projects
Netherlands	Government	Provincie Zuid Holland	Regiodeal bodemdaling, Living lab Boeren op hoog water
		Provincie Utrecht	Dialoog transitie bodemdalingsgevoelig gebied, Programma Aanpak Veenweiden
		Gemeente Krimpenerwaard	CRA-pilot Krimpenerwaard
		Hoogheemraadschap van Schieland en de Krimpenerwaard	Restveengebied in transitie
		Bestuurlijk Platform Groen Hart	Ontwikkeling lange termijn perspectief Groene Hart
	NGO	Water, Land en Dijken	Innovatie Programma Veen
		Veenweide innovatiecentrum	Veenweide innovatie centrum
		Stichting Beekdallandschap Koningsdiep	Veenweide gebied Alde Boarn/De deelen
		College van Rijksadviseurs	CRA-pilot Krimpenerwaard
	University	Wageningen University/ Alterra	Proeftuin Krimpenerwaard
	Private company	De Open Kaart	Toekomst Heggewarren
		PPP-agro	Proeftuin Krimpenerwaard, CRA-pilot Krimpenerwaard
		Rabobank	Groen Cirkels Kaas en bodemdaling
		De Graafstroom	Groen Cirkels Kaas en bodemdaling
Germany	Government	Landesamt für Umwelt Brandenburg	Moorschutz (Promoor)
	NGO	Stiftung Naturschutz Branderburg	Alkaline fens in Brandenburg – a LIFE Nature Project
	University	Greifswald Mire centre	CINDERELLA Project
Poland	University	University of Warsaw	REPEAT

In the following sections tables 4, 5, 6, 7, and 8 show for each theme the categories of factors that resulted from the coding of the interviews. The tables show the percentage of interviews the category was mentioned in, as well as the relative occurrence of each category to the total number of references (per theme).

6.2.1. COLLABORATIVE DYNAMICS

TABLE 4. CATEGORIES OF FACTORS WITHIN THE THEME COLLABORATIVE DYNAMICS

	Categories of factors	Percentage of interviews (n=19)	Percentage of the total references (n=305)
Collaborative Dynamics	Resources	84%	17%
	Executive power	73%	15%
	Consensus seeking	68%	14%
	Motivation	68%	11%
	Trust	63%	13%
	Norms and rules	63%	9%
	Dialogue	58%	8%
	Organisation	47%	4%
	inclusivity	31%	4%
	Reflexivity	16%	4%

Note: This table shows the percentage of interviews each category was mentioned in, as well as the relative occurrence of each category to the total number of references (per theme).

The first theme that resulted from the interviews is collaborative dynamics. These dynamics refer to factors that determine the process of collaboration directly and affect who is participating, how participation takes place and which relationships exist between participants. Most of the categories presented in table 4 strongly overlapped with the aspects mentioned in the literature on stakeholder collaboration, except for the factors that fell within the category of executive power and reflexivity. In the following paragraphs, the factors that had the most overlap or differences with the literature are discussed.

6.2.1.1. RESOURCES

Similar to the theoretical framework, resources such as finance, time, knowledge, and expertise were seen by experts as important factors for collaboration and therefore mentioned in 84% of the interviews. Time was the resource that was most often mentioned within these interviews and was seen as crucial for building trustful relationships, especially when differences between stakeholders' opinions were large. Knowledge and expertise, however, were mentioned in the interviews as being especially important to enable executive power. Also, the absence of a clear scientific consensus could be a barrier to collaboration and executive power, since it fed discussions on what appropriate solutions were. Among the experts, different understandings were elicited on how much carbon is emitted from peat oxidation, what the most optimum water table is and whether methane and nitrous oxide emissions should be accounted for. Other disagreements centered around whether technical solutions like water infiltration systems are preferred over more natural solutions like raising the water table and increasing the amounts of water channels to increase water infiltration. The absence of a scientific consensus made collaboration difficult and increased the chance of debate among stakeholders, which reduced the ability to execute plans quickly. Moreover, the inclusion of practical knowledge and skills in these projects was a success

factor as well for enabling executive power, since it led to better implementation of new technologies and practices if farmers and entrepreneurs were involved in the design and experimentation phase.

6.2.1.2. Executive power, motivation, and inclusivity

In 73% of the interviews, factors were mentioned that aimed to increase the executive power of collaboration. Most of these factors were not present in the theoretical framework. One important factor for executive power was the inclusion of commercial parties in the collaboration between stakeholders in peat meadow areas. These parties often provided valuable practical knowledge of markets, production, sales and held a network in the supply chains. According to an expert involved in the Groene Cirkel Kaas: "*The speed of decision making is much faster within commercial companies compared to, for example, waterboards that have a more long term vision and are more cautious to change*". These actors were more focused on results and eager to deliver which could motivate other participants to get out of the initial stages of decision making and research.

Related to the category of executive power was the category of motivation. Factors that increased or build motivation among stakeholders were mentioned in 68% of the interviews. From the interviews, it could be concluded that executive power and collective action occurred more often when participants shared similar ambitions, motivation, or a sense of urgency. This corresponded with the literature that states that collective action is taken when there is a shared theory of action. Moreover, some experts stated that collaboration was more effective and responsive when only a few actors were included because that decreased the chance of parties vetoing. On the other hand, not including all relevant perspectives and interest in other projects formed an obstacle further along the way when parties felt that they did not influence the decision-making.

6.2.1.3. Trust and consensus-seeking

Factors regarding the building of trust and consensus-seeking were mentioned in 63% and 68% of the interviews respectively and were seen by experts as important factors for collaboration. These factors had a lot of overlap with the literature on collaboration. According to the experts, there was often a feeling of distrust in peat areas between farmers, government, and scientific institutions. Trust levels between participants showed to shape the process from the onset of a project and, as the literature indicated, could be a result of the process as well. Trust building was strongly related to other categories like norms and rules, dialogue, consensus-seeking, reflexivity, and inclusivity. For building trust, experts indicated that it could help to make clear agreements on conflict management and role division, and create open dialogues and discussions in which every participant could talk face to face and which sought towards a consensus. A respondent rightfully said: "*The fact that somebody takes time to listen, learn about each other's motivation and perspectives, that builds trust on both sides*."

6.2.1.4. Organisation

Factors surrounding the organization of collaboration were mentioned in 47% of the interviews and to a large extent overlapped with previous theory. One success factor that was mentioned was the organization of individual parties, such as farmers or citizens, within a cooperative. This made it easier for the collaboration as a whole to come to a consensus and act collectively because there were fewer participants involved within the process of decision-making. Another important success factor within this category was neutral coordination. Hiring a neutral coordinator, according to some experts could alleviate distrust among stakeholders in peat meadows. This gave individuals an opportunity to talk freely to the coordinator without having to deal with the distrusted parties, which led to a better assessment of the needs and concerns of the individual stakeholder. Such organizational support helped in the process of collaboration as parties became more aware of each other's interests, which created space for better assessment of possible mutual gains. Essential was that a facilitator was on speaking terms with all parties involved, had a unifying instead of a dividing effect, and came from a neutral organization that did not have a stake in the issues at hand. Even governments and scientists, regarding issues of subsidence and nitrogen, were not always the most suited for such a role.

6.2.1.5. Reflexivity

The results of the interviews shed light on the role of reflexivity in trust-building, which was not well captured within the previous theory. In the Proeftuin Krimpenerwaard, reflexive monitoring was performed during the project which allowed participants to reflect on why conflict and distrust occurred. It gave participants a feeling that conflict and emotion are inherent to these processes where change is occurring: "*It helps when you know that there are scientific models that show how people react to such changes and you get the understanding that it will not last forever and there are ways to deal with those emotions*". Reflexivity here led to a better understanding of each other's emotions and eventually led to building a more trustful relationship since changes were made along the way that improved the process of learning about each other's interests and perspectives.

Sub-interpretation:

Overall, within these collaborative dynamics two types of collaboration can be distinguished. On the one hand a type of collaboration that seeks consensus and mediates through building trust and inclusion of all voices. This is the type of collaboration that most of the theory is built upon. While on the other hand a type of collaboration that tries to innovate, experiment and implement by gathering a small selection of highly motivated parties that share similar ambitions. This corresponded with the different projects analysed in this study, which consisted of projects that are more designed towards innovation and projects focused on local participatory processes. As an expert from the Peat Innovation Centre claimed: "We are busy with innovation and that works differently than a local participatory process." This shows why it was hard to detect general success factors overall. It is interesting to see, however, that the type of activity a collaboration involves, determines what success factors are. Which means that the aim of a collaboration to a large extent shaped the conditional factors for a collaboration to thrive. Innovation as a CBG process and its conditional factors are not well captured within existing theory. However, for collaboration that takes place within a context of a transition both types of collaborations are necessary.

6.2.2. Multi-level governance

Table 5. Categories of factors within the theme multi-level Governance

	Categories of factors	Percentage of interviews (n=19)	Percentage of total references (n=105)
Multi-level Governance	Local scale	68%	30%
	Adaptive governance	42%	28%
	Predictability and clarity	57%	28%
	Policy instruments	52%	14%

Note: This table shows the percentage of interviews each category was mentioned in, as well as the relative occurrence of each category to the total number of references (per theme).

During the interviews, it became clear that local collaboration in peat meadows is to a large extent influenced by higher levels of government. Table 5 shows four categories of factors regarding multi-level governance that experts mentioned as being important for collaboration. This result was unexpected because these factors got relatively low attention within the literature on collaboration. The theory on stakeholder collaboration depicts these factors as solely contextual elements that determine the playing field for collaboration, yet the results indicated that they have a more direct effect.

6.2.2.1. Policy and predictability

The interviews confirmed that the role of policy from higher governmental bodies like the provinces or the Ministry is to set the boundaries and possibilities for change. They are capable of offering new alternative business models like ecosystem service payments and can offer a sense of security and take away the risk for local actors willing to make the change. However, generally, respondents agreed that there was a lack of instruments and coordination from higher governments, especially since different departments were contradicting in their communication. These bodies were unable to adequately address the issues and demands from local authorities. Experts, in 57 % of the interviews, claimed that factors regarding predictability, in terms of clear goals and vision from the national government, were important for collaboration between stakeholders on the local level. The fact that these goals were absent or contradictory to each other made collaborating with different stakeholders difficult as there were "*a lot of questions and confusions"* about what the future stance is of the national and European government. Thus these results indicated that government bodies could also actively participate in collaboration on the local level and did not only determine the context, but their action directly influenced how collaboration took place.

6.2.2.2. Adaptive governance

In 42% of the interviews, factors were mentioned that connected to the importance of the role of adaptive governance in local projects. To improve collaboration on the local level there is, according to experts, a need for an adaptive government that sees what the barriers are on the local level and acts quickly to take away those barriers. Adaptive governance requires coordination between different departments to avoid that mixed messages are represented by the government. Local realities often encountered that: "*governments do not support their needs and they keep viewing the problem from their departmental perspective, that's where the problem lies.*" On the one hand, targets are formulated to stop subsidence and reduce carbon emissions, while on the other hand, many policies block CBG arrangements to do so effectively. An expert pointed out that: "*what is often said is that farmers need to change, but governments need to change equally so since we are dealing with system change.*"

6.2.2.3. Local scale

68% of the experts mentioned factors regarding the importance of considering the local scale. As each local situation was different and offered different challenges it was important to take into account the localities of the issues in a collaboration. Doing so created solutions that were better capable of addressing the issues on the local scale. For example, in the province of Friesland farmers together with the waterboard created a policy called 'HAKLAM', which means that water tables remain high whenever possible and are lowered when farmers and the waterboard together decide that it is needed. This showed how on the local level it was easier to make agreements that made exceptions to local needs and could simultaneously improve the problem of subsidence. Also, to convince other farmers to take on new practices, experts stated, that it helped to have local examples in the area that raised attention and that were part of the local network. Accordingly, it helped to have many different local pilots to see how in each location it worked best and attract the local communities' attention. Thus, the local scale provided a platform for cognitive anchoring. The importance of scale for collaboration supported and complemented the theory on bottom-up initiatives. Not only did bottom-up initiatives rely on stronger local ties and compliance, but bottom-up initiatives also created better adapted and flexible solutions.

6.2.3. TRANSITION AND BUSINESS MODEL

TABLE 6. CATEGORIES OF FACTORS WITHIN THE THEME TRANSITION

	Categories of factors	Percentage of interviews (n=19)	Percentage of total references (n=94)
Transition	The difficult process of change	63%	53%
	Anchoring	63%	24%
	Learning and experimenting	47%	22%

Note: This table shows the percentage of interviews each category was mentioned in, as well as the relative occurrence of each category to the total number of references (per theme).

TABLE 7. CATEGORIES OF FACTORS WITHIN THE THEME BUSINESS MODEL

	Categories of factors	Percentage of interviews (n=19)	Percentage of total references (n=54)
Business model	Absence of a business model	53%	40%
	Keeping in mind the business model	53%	31%
	Finding a market	32%	17%
	Building a new economy	16%	11%

Note: This table shows the percentage of interviews each category was mentioned in, as well as the relative occurrence of each category to the total number of references (per theme).

Tables 6 and 7 show the third and fourth theme and categories of factors that were identified from the results. The themes transition is discussed below in conjunction with the theme business model because they are largely interrelated.

6.2.3.1. THE DIFFICULT PROCESS OF CHANGE

Many of the studied projects were dealing with a transition from a conventional agri-food industry that is based on draining the soil to a new agricultural system that is future-proof and can thrive in wet conditions. Alternative wet uses of farmed land were often viewed as something completely different by experts: "*try to convince a baker to become a butcher*." Factors that connected to the difficult process of change of a transition negatively affected collaboration according to 63% of the interviews. Previous theory on collaboration did not describe how transitions affect collaboration between stakeholders. However, theory on mutual gains and common goals, which occupied an essential role within theory on stakeholder collaboration, helped explain why collaboration within the context of a transition is hard to realize. Experimenting and learning are factors that are needed for a transition. Therefore, in 47% of the interviews, the ability to experiment and learn were mentioned as important factors to improve the success of a collaboration within the context of a transition. Inherent to this was that risks were taken and mistakes were allowed to be made, which required a certain amount of freedom and uncertainty. In a collaboration: "*the what's in it for me for both sides*" needed to be clear, said a respondent. Otherwise, there was no incentive to participate. The element of transition made this often hard to assess. Stakeholders, especially farmers, were willing to participate if there was an alternative business model. In other words, they were willing to cooperate when there were opportunities for mutual gains, but 53% of the experts portrayed that a real business model for farmers that is effective both economically and environmentally was lacking.

6.2.3.2. PILOT PARADOX

Connected to this, two respondents mentioned the pilot paradox. This refers to the paradox that to bring about change it is best to have a pilot to take place outside of the regime and further away from current practices. However, if the aim is that after the pilot the regime takes on the experiment and continues with the outcomes, it is better to stay close to the regime and within its comfort zone. Many experts thought that it was best to make small but meaningful steps, although that might take a long time. Therefore, 53% of the experts mentioned that a positive factor was to constantly keep in mind the business model. Scientists, however, especially opted for more fundamental change, because they view that fundamental change is needed to reach targets and halt climate change. This corresponded with the different perspectives that stakeholders held in the Vrouw Vennepolder on what a transition constitutes. It was hard to say for experts which strategy made more impact and it depended on the aim of the project. Whether it aimed at setting about fundamental change or more incremental change and whether it sought towards innovating or towards finding consensus and mutual gains.

A few experts mentioned that having different experiments within a single pilot that ranged from experiments within the comfort zone of the regime to more extreme experiments helped to bridge the gap between the regime and the niche. An expert from the Peat Innovation Centre explained that: "*When farmers come to visit us to see the water drainage technology, we also pass by the cranberry fields and explain it to them, then they become more used to the idea when they see it growing in the field*." The same mechanism applied when farmers experimented with new technologies or crops on their land: "*because other farmers become more comfortable with these experiments when they see a colleague applying it, instead of researchers*. "

6.2.3.3. ANCHORING

Theory on anchoring proved to help in understanding why regime change is hard to accomplish by CBG. Anchoring strategies were mentioned in 63% of the interviews. According to experts, they needed to be formulated in the early stages of the project and should be made explicit. This was a challenge that many projects had to deal with. Therefore, a few respondents claimed that: "*it was a strong point when people were aware that it did not end after this*," and early on in the process thought about what came after the project. Network anchoring was most often mentioned by experts as important for dealing with subsidence because the problem is owned by a range of different actors. Cognitive anchoring within the project only occurred among the participants within the collaboration and on the local level, but it rarely extended to changing people's mindsets outside of the project's group. Institutional anchoring strategies, however, were not mentioned by any of the experts as being important factors. This was surprising since many experts stated that government policy is a crucial aspect in dealing with subsidence. The fact that institutional anchoring strategies were not mentioned could also indicate that institutional anchoring strategies were lacking within these projects and were hard for CBG to implement. Moreover, the indication that only two of the three strategies were used, could support the theoretical claim that these three strategies need to be combined to enable regime change.

6.2.4. *INTEGRALITY*

TABLE 8. CATEGORIES OF FACTORS WITHIN THE THEME INTEGRALITY

	Categories of factors	Percentage of interviews (n=19)	Percentage of Total references (n=41)
Integrality	Integrated approach	42%	32%
	Tension and conflict	26%	29%
	The complexity of the problem	32%	24%
	Nuanced message	16%	15%

Note: This table shows the percentage of interviews each category was mentioned in, as well as the relative occurrence of each category to the total number of references (per theme).

Table 8 shows four categories of factors that are connected to the fifth theme of integrality. This theme refers to the need to frame and deal with the problem of subsidence in its entirety instead of solving the different problem dimensions separately.

6.2.4.1. INTEGRATED APPROACH

"*So much comes together in peat meadow areas*" is a statement that found resonance in most interviews. 32% of the experts mentioned that factors regarding the complexity of the problems problematized collaboration on the local level. The issue of subsidence is connected to many other problems and: "*local citizens do not think it is realistic to solve it in isolations of other problems*." Therefore, factors that referred to using an integrated approach were mentioned by 42% of the experts as having a positive influence on collaboration. According to the experts it resulted in a more nuanced message about what was possible or not, which in 16% of the interviews was explicitly mentioned as a success factor. Using an integrated approach sometimes evoked conflict and tension between stakeholders which was not always helpful in collaboration, but it did show "*what is truly on people's mind.*" Thereby it showed what the trade-offs were and gave more insight into the barriers for certain options and that was brought directly into the dialogue instead of after the project. This was valuable since it made it easier for policymakers, citizens, and other parties involved to make the right choices and become informed. For example, including social and cultural dimensions was relevant to understand why some farmers were not keen to change their methods or including the importance of people's attachment to the historically evolved landscape showed why growing cattails could evoke opposition.

6.2.4.2. MUTUAL GAINS

Looking at problems in an integrated way also seemed to create opportunities for mutual gains that otherwise would be neglected, for example with the placement of solar panels. A respondent mentioned that: "*including the energy transition might also help with financing the challenge of subsidence* " and someone else said that: "*for a pilot, it is important that you show that raising the water table solves multiple issues simultaneously and is not just about reducing* CO_2." Additionally, the results from the interviews showed that integrating different dimensions within the issue of subsidence helped with identifying mutual gains. When mutual gains were found through including different dimensions this enabled collaboration between actors that otherwise conflicted.

6.2.5. EXTERNAL ENVIRONMENTAL FACTORS

TABLE 9. CATEGORIES OF FACTORS WITHIN THE THEME EXTERNAL ENVIRONMENTAL FACTORS

	Categories of factors	Percentage of interviews (n=19)	Percentage of total references (n=32)
External environmental factors	Initiation of the collaboration	32%	50%
	History and public sentiment	21%	25%
	Physical conditions	21%	25%

Note: This table shows the percentage of interviews each category was mentioned in, as well as the relative occurrence of each category to the total number of references (per theme).

Finally, what became evident from the studied projects was that external factors concerning the political, social, or physical environment, in accordance with the theoretical framework, had an additional effect on cooperation between stakeholders in peat meadows. Three types of environmental factors (see table 9) were identified that influenced collaboration from the phase of initiation until implementation. For example, the Paris and Dutch climate accord have both set in motion several projects surrounding subsidence, since the issue has risen on the political agenda. Also, the historical relationships between participants influenced their collaboration. In some projects, citizens and local entrepreneurs distrusted the government due to former promises that were not kept or plans that were not implemented. Additionally, former policies of the government shaped the process of collaboration. For example, in Friesland, there had always been a tendency to drain the land and make cultivation easy for farmers, in comparison to the province of Utrecht where politicians were much more aware of the risk of drainage. This meant that in Friesland the challenge became a lot harder and so did collaborating with stakeholders. Moreover, this showed that the physical conditions of an issue differed depending on the location which in turn influenced the collaboration between stakeholders.

The issue of subsidence was often viewed from the farmers perspective' as another burden and problem that farmers needed to solve. Especially since the outbreak of the nitrogen crisis that from 2019 onwards has dominated the debate around agriculture. This illuminated how public sentiment influenced the process on the local level because it determined how people viewed these projects and situated them within public debates. However, these public debates also created a window of opportunity for fundamental changes as a respondent said: "*it creates a feeling of urgency that something is wrong and needs to be changed*."

7. Discussion

7.1. Reflections on community-based governance

The question that this research has tried to answer is how CBG can establish a transition to sustainable food production in peat meadow areas in the Netherlands. To answer this question, this research has specifically looked into what factors are important for collaboration between stakeholders and which stakeholder perspectives exist within the Vrouw Vennepolder. This chapter shortly discusses the main results that emerged from the interviews and stakeholder analysis, how this compared to existing theory on stakeholder collaboration, and what the implications are of these findings. Doing so allows the formulation of advice to the project of the Vrouw Vennepolder and CBG in general on how they should approach the process of collaboration with stakeholders in the future. In appendix 10.1 more elaborate and tailor-made advice to the Vrouw Vennepolder is formulated, which provides hands-on advice on how to cope with collaboration within the context of a transition. Additionally, this chapter mentions the limitations of this study, and possibilities for future research are provided.

Regarding stakeholder perspectives, in the Vrouw Vennepolder, a divide could be detected broadly between innovative actors and more conservative actors. Innovative actors were generally open to changes in the landscape and were open to finding new business models outside of the current economic regime. Conservative actors, however, wanted the current landscape and business model to remain the same. These two types of actors held opposite views on how transitions unfold. Whether it happens through incremental or more fundamental changes. The challenge for the projects is to find ways to connect both types of stakeholders that are necessary to establish a transition to sustainable food production in peat. These hybrid forums where both these actors participate are where transitions eventually take place (Elzen et al., 2012).

Within the collaborative factors that emerged from the expert interviews, a similar divide could be detected. The results indicated that there are two sets of factors that fell broadly under two different aims of collaborating: innovating and polderen. The first set of factors centered around collaboration that focuses on consensus-seeking and trust among large sets of stakeholders and aims at increasing the legitimacy of governance. A process that has reminisces of polderen, a Dutch term that represents the historical decision model of the Netherlands in which different stakeholders within society sit together at the same table and try to reach a consensus (Andeweg & Irwin, 2014). The act of polderen did particularly well when there was a balanced representation of participants, an open dialogue that followed rules and procedures, and coordination by professional parties. Most factors provided by the theoretical frameworks have proven to explain well why collaboration in terms of polderen worked or not. Here the most overlap with previous theory was found. The element of reflexivity in building trustful relationships among stakeholders, that stood out in some projects, could be added to the theory as a way to create mutual understanding and legitimacy of the process.

The second set of factors surrounded the type of collaboration that was needed for innovation. This process was characterized by including a limited number of actors that were highly motivated and possessed relevant scientific and practical knowledge. This was necessary to build a certain amount of executive power that enabled these projects to act and innovate. Experimentation and learning were key activities of innovating, which required flexibility and freedom to experiment and take risks. The theory could only to an extent help with understanding how collaboration works regarding the act of innovating. The concept of mutual gains helped in explaining why collaboration can be difficult to achieve in the context of a transition. This was because mutual gains were hard to assess and common goals sat in the way of being able to freely experiment. In addition to previously developed theory, this research has shown that collaboration in a transition consists of both the act of polderen and innovation. Combining these two processes is difficult because they flourish under different conditions and are affected by different factors. Thus CBG arrangements, dealing with a transition, need to take this into account when designing a collaborative process. Knowing how these transitions develop and knowing what it needs from CBG arrangements already gives an insight on how to tackle these processes.

Following the analysis three recommendations can be made for the Vrouw Vennepolder and CBG in general to set forth a transition toward sustainable food production in peat meadow areas: Firstly, to set in motion a transition, a balance needs to be sought between the act of polderen and innovating as well as finding ways to connect innovative and conservative stakeholders. Important to know is that completely combining these processes can be problematic because they require different conditional factors to work well. On the one hand, the project needs to implement factors that enable innovation and on the other hand keep in mind factors that build consensus and legitimacy. If you merge both processes you risk slowing down innovation and experimentation, by including too many and unmotivated actors. On the other hand, completely separating the two risks that actors will feel left out and risks not being able to implement new practices or business models because of a lack of consensus among stakeholders. Factors that try to combine these processes are, according to experts, improving organizations among local farmers and citizens through cooperatives, experimenting together with farmers, and including a palette of traditional to more innovative experiments within a single project.

Secondly, the use of a reflexive and integrated mutual gains approach that includes different problem dimensions within the project can create opportunities for mutual gains that might otherwise remain unobserved. Especially since mutual gains are difficult to assess in a transition, broadening the scope of the problem can help to find ways in which every actor benefits from collaborating. Therefore, it is recommended to involve not only environmental and economic dimensions into the project but also, for example, social and cultural dimensions. Examples of topics that could be integrated are, for example, a successor for farmers, an aging rural population, urbanization, housing crisis, energy transition, and regulatory burdens. If for example, a CBG arrangement not only aims to reduce carbon emission but also aims to reduce regulatory burdens for farmers or increase possibilities for the succession of a farm, that might bring light on unobserved mutual gains.

Thirdly, it is important to make anchoring strategy explicit from the onset of the project. Apart from anchoring change through building networks of people and changing their cognitions, CBG needs to incorporate institutional anchoring into its transition strategy. According to the expert interviewed in this study, changes on the institutional level are vital to implement new business models and sustainable agricultural practices in peat meadow areas. Institutional anchoring should be a specific strategy that CBG arrangements should invest in. For example, by addressing higher governmental bodies in the early stages of the process and keep advocating for the provision of required policy instruments. Otherwise, projects might risk waiting a long time before real change is instigated and implementation takes shape. These institutional actors should become involved in the project as much as possible to see what national policies are needed on the local level and what role from the government is needed to make a change.

7.2. Multi-level governance and spatial planning of the Netherlands

Dealing with subsidence on the local level, according to expert interviews, needs integrative and adaptive governance. This is especially lacking within national ministries that are too compartmentalized. The same holds for the spatial planning of the Netherlands which needs an integrative vision from ministries that work together instead of against each other. Integrative vision means taking leadership and taking responsibility in making choices about what to do and how to get there. The Ministry of the Interior and Kingdom Relations (2020) rightfully points out in the National Policy Strategy for Infrastructure and Spatial Planning that these decisions should not be postponed to new generations, but to date, these choices are avoided and clarity of what future policies will bring is absent, according to local actors. The transition in peat meadow areas, which coincides with many other transitions connected to the living environment, will benefit from this clarity, as it takes away a lot of the risks that local actors are faced with.

It is not to say that clear vision and targets can also hinder a transition since it is not always clear what a transition leads to. Therefore, it could distort the process of innovation and creativity within local niches, but it will help to bridge some gaps between the collaborative processes of polderen and innovating because uncertainties are

taken away and opportunities for mutual gains might arise. Therefore, I advocate for more adaptive governance that caters to the needs of local actors that are especially well capable of integrating different issues. The revision of the Environment and Planning Act, for example, shows promise in this regard focusing more on society's needs and demands instead of what rules and laws forbid actors to do. However, that simultaneously means translating society's needs and demands into a clear, cohesive, and comprehensive vision on the future living environment of the Netherlands. The example of the influence that the climate accords had on the initiation of collaborations shows that these visions and international agreements have a strong influence and that such accords do make a difference. Therefore the role of these types of instruments should not be underestimated. A similar accord or vision could be made for the spatial cohesion in the Netherlands and set in motion several processes that speed up a transition to sustainable food production.

7.3. Limitations and future research

One of the limitations of this research is that until now no transition has taken place yet in peat meadow areas. This makes it hard to assess what is needed for a transition. Therefore, the results are based on what experts think is important for a transition to take place. The same holds for the presented themes and underlying factors. These factors represent how experts evaluated collaboration and what they perceived to be important, but these resulting factors are not conclusive. However, since this research takes on a social constructivist approach to collaboration, the perceptions of interviewees are deemed valuable for understanding the role of collaboration between stakeholders.

Another drawback of this study is the representativeness of the interviewed experts and stakeholders since they have not been selected randomly, but purposively. This limits the ability to generalize the findings of the research. Additionally, the results are especially relevant for collaboration in peat meadow areas and are limited in their ability to give statements about stakeholder collaboration in general since the focus has been on projects dealing with subsidence. However, the implication of these results could be relevant for other projects concerned with the protection of ecosystem services that have to deal with diverse sets of stakeholders within the context of a transition. The results of this study, which shows the contrasting relation between innovating and polderen, is most likely not limited to peat meadow areas but can be found in different sustainability transitions contexts.

For future research combining both quantitative and qualitative methods might bring about more conclusive answers to what success factors are regarding collaboration and transition management. This way qualitative data could be combined and compared with quantitative data such as CO_2 reduction or the average increase of the water table. Such a comparison could create a more supported judgment on which factors in collaboration contribute to halting subsidence. This research would need to span a longer period to be able to collect adequate amounts of data but would contribute to the establishment of more transdisciplinary methods for researching collaboration.

Finally, the focus of this study has been to understand which mechanisms are important for CBG arrangements to work well in the context of a transition. This is an instrumental approach to researching governance. However, the results of this research underpin the importance of institutional power and multi-level governance in enabling a transition. This raises questions about whether the CBG model, in general, is the best model capable of enabling transformational change. Future research could investigate more in-depth to what extent the CBG model possesses the needed governance capabilities to deal with wicked problems and accelerate transitions.

8. CONCLUSION

A transition to sustainable food production on peat is necessary to reduce subsidence. To stop CO_2 emission, biodiversity loss, salinization, flood risks, and increasing economic costs the water table in peat meadow areas should be raised. This transition needs a diversity of stakeholders to collaborate and share responsibility for the protection of peat soils. According to the literature, CBG could offer a possible way to enable a transition to sustainability through collaboration among stakeholders on the community level. Therefore, this thesis has tried to answer the question of how CBG can help establish a transition to sustainable food production in peat meadow areas. This served two aims: (1) to critically assess and contribute to the CBG model and (2) to formulate advice to the Vrouw Vennepolder and CBG on how to approach collaboration with stakeholders to enable a transition.

The case of the Vrouw Vennepolder has shown which stakeholders are needed for a transition and what is needed from CBG to enable collaboration among these stakeholders. Two main stakeholders' perspectives were identified. On the one hand an innovative perspective among actors that are comfortable with changes in the peat landscape and changes in the current business model. On the other hand a conservative perspective from actors that are afraid of losing the open landscape and their way of operating their business. Both types of stakeholders are necessary for the transition to take place. Therefore CBG needs to find ways to connect these opposite views and enable collaboration.

Theory regarding stakeholder collaboration primarily focused on factors that are needed to achieve consensus, mutual gains, and common aims. These elements were seen as essential to enable participants in a collaboration to agree, make decisions, and act. In the interviews with experts from projects dealing with subsidence six themes of factors emerged that influenced how collaboration took place within these projects. Overall, the existing theory could explain well which factors are important for the type of collaboration that is focused on consensus-seeking, a process that is reminiscent of the Dutch polder model. However, the result from the interviews indicated that collaboration sometimes, especially in the context of transition, aims to innovate. This type of collaboration thrives in different conditional factors compared to the act of polderen. Moreover, collaboration within the context of a transition is a different process than the type of collaboration that theory is concerned with. The concept of mutual gains has helped to explain why collaboration is so difficult due to the uncertain nature of a transition, but it did not provide a clear answer on how to deal with the absence of mutual gains.

Finding a balance between the act of innovating and polderen is a core aspect that CBG has to achieve to set in motion a transition to sustainable food production. The local scale is well suited to find a synergy between them since local communities are more experienced with using an integrated approach. The results of this research show that the integration of different dimensions helps with identifying the necessary mutual gains that drive stakeholders to collaborate. Anchoring change, especially institutionally, is a challenge for CBG. Therefore, strategies to anchor change on an institutional level should be invested in, to take away the risks of collaborating and increase opportunities for mutual gains. Finally, results from this research show that the issue of subsidence and the transition towards sustainable food production needs adaptive governance from high levels of government. Adaptivity requires the formulation of an integrative vision on the living environment to adequately cater to local needs that arise when dealing with sustainability transitions.

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10. APPENDIX

10.1. ADVICE TO THE VROUW VENNEPOLDER

The most prominent challenge that the project in the Vrouw Vennepolder has to deal with is the diverging opinions and interest between innovative stakeholders and conservative stakeholders that are needed to set forth a transition. Therefore good communication and clear agreements between stakeholders will be essential for the project. Communication is in part about the communication from LVO to the local neighborhood, as many stakeholders indicate that they would like to become involved in the project. Which to them means that they want to be informed about the developments of the project. Simultaneously LVO wants to involve local people and their members in the project, but involvements can be challenging, as a local farmer claimed: "the challenge of letting people help and think along in the project is to get real involvement and not just people that come and go as they like." Therefore the project needs to think about how to involve the local community in a way that triggers real involvement.

Another part of communication is that the project listens to the voices of different stakeholders in the area and that an open dialogue can develop among all these actors. That way a strong bond can be built. The challenge is to listen to the needs of other stakeholders and find compromises that both parties agree to. It is important to adequately channel these concerns and make sure that these feelings and opinions are incorporated into the project. Otherwise, the project might risk protest and opposition from a growing group of protestors. Moreover, these people will have to be convinced eventually for a transition to take place. The frontrunners will not be difficult to persuade into adopting sustainable alternatives, but the challenge lies at the majority of the farmers that want to change but are often stuck within the current system. A few (hands-on) recommendations can be drafted from the result of this research that could help with the challenges that CBG and the Vrouw Vennepolder are faced with:

1. **Community-based governance cannot be viewed as a toolbox approach**, on the contrary, the process itself is not a means to get to the end goal, but a good working process and collaboration is an end goal in itself. The quality of a CBG arrangement lies in the ability to cope with instances of conflict and drawbacks. Of course, there are negative and positive factors that influence collaboration. However, each CBG arrangement has its particularities, context, landscapes, and so on, which makes generalization extremely difficult. What works well in one case might have the opposite effects in other cases. This means that there is no one-way solution to designing the process of stakeholder collaboration.

2. With this in mind, it is important to keep **monitoring and reflecting** on the process of collaboration and do not take it as something that is given or trifle. When conservative and innovative actors gather around the same table it can be expected that conflict occurs. Good coordination of such a process by making clear rules, professional coordination, and allowing everyone to interact is important to safeguard the process. This process simultaneously should be monitored and reflected upon to see what can be improved and create an understanding of how these processes develop. Such monitoring should preferably be executed by an external party to ensure objectivity and independence to the process.

3. It is important to **find a balance** between separating the process of innovating and polderen and merging them. If both processes are merged there is a risk that unmotivated or too many actors slow down the process of innovation and experimentation. However, completely separating them risks that actors will feel left out or risks missing out on relevant knowledge and aspects that are needed when these parties need to implement new practices or business models. These essential stakeholders should be included already in an early stage by giving them for example an advisory and more passive role. The fact that the project will try out different land uses from more conventional to extreme variants helps to invite parties that are more hesitant and get them accustomed to more experimental uses of the land.

   Another way to find a balance could be by having two tracks of collaboration at the same time: one track of innovation and one of consensus-seeking. These platforms can feed each other now and then,

to keep each other on track, do a reality check, and inspire. Moreover, I recommend involving one or more of the innovative farmers and give them an active role in the management of the land. These farmers hold valuable knowledge about the management of a farm and keep an eye on aspects that researchers can overlook. This is especially important since practical barriers are where innovation sometimes strands in other cases in peat meadow areas. Hopefully, this farmer, if the experiment is successful, becomes an ambassador of the project. One that can easily reach out to other farmers and tell them a credible story that farmers will trust. Simultaneously making sure that groups of farmers are organized well can make collaboration easier, since not every farmer has to participate individually, which reduces the number of participants involved. Also, in other cases, good organization of farmers was helpful in the phase of implementation, as they can learn from each other, and make steps collectively, like applying for subsidies or figuring out the cost that rewetting requires.

4. **Include commercial parties and consumers** from the beginning of the projects. These stakeholders are often not included in other projects in peat meadow areas. However, they are essential to enable a transition. They can encourage more conservative actors to participate because the involvement of these actors can be seen as the beginning of the shaping of a business model. The presence of a business model is a crucial element to motivate these conservative stakeholders. Additionally, they often hold valuable and practical knowledge that is needed for setting up experimentations that can be implemented. Including consumers can be difficult, since it is a large and diverse group, but some (local) commercial parties can indirectly involve consumer perspectives in the discussion since they are more aware of consumers' demands and needs.

5. Use an **integrated approach** while collaborating by integrating environmental, economic, cultural, and social dimensions. This can be a difficult challenge and it is not always possible to integrate everything, but when possible it helps with identifying mutual gains and thereby strengthens the need for collaboration. Examples of topics that could be integrated within the project of the Vrouw Vennepolder are, for example, a successor for farmers, an aging rural population, urbanization, housing crisis, energy transition, and regulatory burdens.

6. **Anchoring strategies** should be made explicit and invested in from the onset of the project. Especially in terms of institutional anchoring which is crucial for successful CBG arrangements. For example by addressing higher governmental bodies in the early stages of the process and keep advocating for the required policy changes and instruments. Otherwise, the projects might risk waiting a long time before change is instigated and the implementation takes shape. These high governmental actors should become involved in the project as much as possible to see what policies are needed on the local level and what is needed to make a change.

   Interestingly, the project of LVO shows so far that it is possible to replace this crucial governmental role with a strong community that is willing to pay for the protection of the landscape. The project in the Vrouw Vennepolder could serve as an example for governments of how it can be possible to achieve mutual gains in peat meadow areas and take up the role of guardians of the landscape. Besides, it is in the interest of the national government to become involved in these projects and learn from these experiences. This way governments can learn what role they could have in the future to help support a transition to a landscape that integrates multiple functions and provides the required services to people.

10.2. Consent form

For the master thesis research of Dore Engbersen it is necessary to use your personal data. To use this data during our research and record the interview we need your consent.

What data are being used?

- Your recorded answers in the interview
- Your organization's name
- Your location (excluding your personal address)

What happens if I change my mind?

If you change your mind, you can send an e-mail to dore_engbersen@hotmail.com with a short message indicating that you want your personal data to be removed. Your name will be permanently deleted from the collected data. Any other information that can be traced back to you will also be permanently deleted.

What will be done with my data after the master thesis research project?

Your data will be not be used for further research after the end of the research project in July 2021.

Please place a cross in the box that is applicable.

O I do not consent to any use of the information collected about me.

O I consent to the use of the information collected about me for this research project and recording of the interview.

Name, date, location and signature

_____

10.3. Interview questions expert interviews

1. Could you introduce yourself and explain what your role is/was within the project?
2. Could you explain what the project was about and explain how it was initiated?
3. How did you experience de collaboration among the different involved stakeholders?
4. What was the biggest challenge for good collaboration?
5. To what extent would you (up till now) describe the project as a success?
    a. Why or why not?
6. Which factors contributed to the success of stakeholder collaboration specifically?
    a. How did these factors contribute and why were these the most important?
7. Which other factors contributed positively to the collaboration among stakeholders?
8. If you could do it again, what would you change or do differently?
    a. Why?
9. Which other factors negatively contributed to stakeholder collaboration?
10. Were there any stakeholders that were not involved, but you think should have been involved?
11. What do you think is the importance and role of the province and ministry in collaboration on the community level?
12. How can we learn from pilots and how can these lessons be converted to concrete actions and further implementation?

10.4. Interview questions stakeholder interviews

1. Could you introduce yourself?
2. Are you already involved in the project of Land van Ons?
    a. If yes: what is your role?
3. To what extent do you notice something from subsidence?
4. To what extent are you aware of the project and the developments surrounding the project of Land van Ons?
5. Could you describe what you think is the aim of the project?
6. Do you think it is important that this project takes place? And to what extent do you think it is important for the future of the surrounding area?
    a. If not: What should change about the project to get your support?
    b. If yes: What do you find most important about the project?
7. To what extent are the experiments and the project in general interesting for you as a stakeholder?
8. What conditions does the project have to fulfill for you to describe the project as a success?
9. What could be pitfalls or challenges that the project needs to be aware of?
10. To what extent do you want to be involved in the development of the project?
    a. If yes: In what way would you like to be involved?
    b. If no: why not?
11. What do you think that the opinion is of other people in the area on the project?
12. What do you think will be the biggest challenge is for future stakeholder collaboration in the area
13. The project aims to experiment with different ways of producing food in the polder. One idea is the possibility of agroforestry and perennials. How do you perceive that idea?
    a. To what extent do you think it is realistic?
    b. How do you think that other stakeholders perceive this idea?
14. Another idea is to experiment with rich herbal pastures. How do you perceive that idea?
    a. To what extent do you think it is realistic?
    b. How do you think that other stakeholders perceive this idea?
15. The project aims to find a business model suitable for future-proof agriculture and wants to experiment with different models, such as local food chains, regional products, carbon credits, or ecosystem services. What business model would you prefer the project to experiment with?
16. Which stakeholders do you think are essential to include in the project?

10.5. STAKEHOLDER TABLE

Stakeholder	Interest	Attitude	Already Included in the project	Attitude towards changes in the landscape	Business model preference	Method of data collection
1. Land van Ons	Biodiversity restoration, landscape restoration, developing nature-inclusive farming methods, gain knowledge about wet agriculture, close the gap between rural and urban realities, halting subsidence, reducing carbon emissions, exploring new forms of property ownership.	Positive	yes	Changes are okay if they are not too drastic and landscape elements stay intact.	Local and transparent food supply chains that connect consumers with rural areas. Possibly combined with income from carbon credits and ecosystem payments.	Interviews, stakeholder meetings, website: https://landvanons.nl/
2. CML (Leiden University)	Biodiversity restoration, attaining research results on biodiversity restoration, developing future-proof agricultural systems, halting subsidence, reducing carbon emissions, educating students, developing alternative business models.	positive	yes	Changes are part of the landscape and landscape should not be set in stone.	A business model that does not stimulate unlimited productivity, but stimulates the provisioning of ecosystem services. Preferably a business model that combines food production with carbon credits and ecosystem payments.	Interview, stakeholder meeting, grey literature: Research Plan for the Vrouw Vennepolder (2021)
3. Hoogheemraadschap van Rijnland	Water quality, water safety and water quantity, sustainable management of fresh water in agriculture, future proof agricultural system, gain knowledge about dealing with	Positive	yes	Changes to the landscape are okay if they are beneficial to better water management.	A business model that allows farmers to adopt sustainable practices. Ecosystem service payment could provide a	Interview

	subsidence and the role of waterboards to stimulate alternative land uses.				working business model. No particular preference.	
4. Holland Rijnland	Biodiversity restoration, future-proof agricultural business model, halting subsidence, a new solution for dealing with subsidence in the area, reducing nitrogen emission, improve quality of life, connectivity with other targets like housing and energy transition.	Positive	yes	Changes in the landscape are possible but with respect to the historical landscape.	Local food supply chains that enable small-scale and sustainable farming.	Interview, stakeholder meeting
5. Gemeente Kaag en Braasem	Halting subsidence, gain knowledge about solutions for subsidence, meeting national CO_2 reduction targets, biodiversity restoration, education for residents.	positive	yes	The open landscape characterizes the municipality so therefore should remain intact to a large extent.	A business model which enables farmers to be independent of other actors like the government.	Interview, Stakeholder meeting, grey literature: Omgevingsvise Kaag en Braasem (2020)
6. Tenant (land manager/farmer)	Preserve the current characteristic of the landscape, future perspective for farmers, working with farm animals, the importance of a successor for farmers.	Positive	yes	Changes to the landscape are not okay if they devaluate the current landscape.	No clear preference, but would be interested in carbon credits as a business model.	Interview
7. Meadow bird conservationist	Biodiversity restoration, protecting the open landscape, reduce co2 emissions, a business model for farmers.	Somewhat negative	No	Changes to the landscape are not okay and detrimental to the meadow bird populations.	A business model that stimulates farmers to protect meadow birds. Preferably in the form of ecosystem payments or carbon credits.	Interview, Stakeholder meeting
8. Neighboring residents	Biodiversity restoration, protecting meadow birds and the landscape, halting subsidence, keeping their land intact and dry.	Moderately positive	no	Divided: some residents like the experiments and new energy while others are afraid of losing their view and attachment to the landscape.	No clear preference.	Interview, stakeholder meetings

9. Local residents	Biodiversity and nature protection, recreational functionality of the area, future perspectives for farmers, halting subsidence.	Moderately positive	no	Overall most residents value the landscape as it is, although more wilderness is okay if it benefits nature.	The availability of local food products is valued by many residents.	Interview, stakeholder meeting, grey literature: Omgevingsvise Kaag en Braasem (2020)
10. Conventional Farmers in the region	Produce enough food, continue to work with farm animals, long and short term perspectives for farmers, halting subsidence with technological fixes like water filtrating technologies, the importance of having a successor for the farm.	Negative	no	The landscape should stay intact as citizens in the area value the open grassland with cows.	A business model that is based on the production of affordable quality goods. Carbon credits or ecosystem payments are no solution to the problem since we operate in a free market.	Interview, stakeholder meeting
11. Provincie Zuid-Holland	Biodiversity restoration, future-proof agricultural business model, halting subsidence, a new solution for dealing with subsidence in the region, reducing nitrogen emission, connectivity with other targets like housing and energy transition, knowledge exchange, and pooling of knowledge, reducing CO_2 emission with 1 MT by 2030.	Positive	no	Changes in the landscape are possible but with respect to the historical landscape.	Local food supply chains that enable small-scale and sustainable farming.	Interview
12. Rabobank	Long-term financial stability, good public image, halting subsidence, biodiversity restoration, CO_2 reduction, establish a carbon credit system.	Positive	no	No explicit opinion against changes in the landscape.	A business model that uses the power of the market. Especially a model that combines the production of quality goods with the sale of carbon credits.	Interview, website: https://magazines.rabobank.nl/alkmaar/visieopveenweide/?ItemId=56930
13. Innovative farmers in the area	Biodiversity restoration, CO_2 reduction, halting subsidence, finding alternative business models, connect with consumers, future perspectives for farmers, gain knowledge of	Positive	no	Changes are part of the landscape and landscape should not be set in stone.	Innovative business models. Local supply chains are not that interesting since it is already a successful business model. Therefore a business	Interview

	how to farm with higher water levels, local food production.				model that experiments with carbon credits and ecosystem payments. Although these farmers still prefer producing food since that's what interests them.	
14. Ministry of Agriculture, Nature and Food Quality	Biodiversity restoration, future proof agricultural business model, halting subsidence, a new solution for dealing with subsidence in the Netherlands, reducing nitrogen emission, connectivity with other targets like housing and energy transition, knowledge exchange and pooling of knowledge, reducing CO_2 emission with 1 MT by 2030, Reaching carbon neutrality by 2055, building 1 million houses, abiding by EU targets and level playing field.	Positive	no	Changes in the landscape are possible but with respect to historical landscape and increasing multifunctionality of the landscape.	Circular agriculture business model with local food chains, as well as business model based on the export of high-quality goods. Unclear what preference is. Preferably business models that are independent of government support.	Website, grey literature: NOVI(2012), Circular agriculture vision (2019), Realisation plan Vision LNV(2019)
15. Consumers	Affordability of food for the majority of consumers plays an important role, as well as the good taste of food. A large group of consumers is concerned with the sustainability and the nutritional value of food. 57% of consumers want to be active in their food production. 77% don't see the cost as a barrier to consuming products with certification. However. 70-75 % think that food with certification should become cheaper. Important factors that prevent consumers from consuming sustainably are a lack of knowledge, time, availability, skills.	unknown	no	unknown	For some consumers prefer a business model that centers around affordability, ease of use, and supply. Whereas other consumers prefer to have local products and sustainable products, and connectivity with their food production.	Scientific literature: (Rood et al., 2014)
16. Market actors (Supermarkets, Local shops, and restaurants)	Making a profit, future for their company, selling good quality products that meet certification and food safety needs, creating added value through storytelling, continuous and stable supply, easy logistics	unknown	no	unknown	Most market actors prefer a business model with low cost and high production of qualitative food. A business model that is easy in terms of logistics and can give a	Scientific literature: (Arkenbout & Prause, 2014; Tacken et al., 2021)

Also, there is a small fraction of the market that focuses on local and sustainable food production (Arkenbout & Prause, 2014; Tacken et al., 2021). That is not only looking to make a profit but wants to improve biodiversity, reduce CO_2 emissions and give fair prices to farmers and support local producers.				continuous supply of food. A small portion of market actors, however, wants to contribute to making an environmental impact and increasingly is focussed on buying and selling local products that improve our environment.	

10.6. CODEBOOK EXPERT INTERVIEWS

- 1.Business model
  - 1.1. Absence of a business model
  - 1.2. Building a new economy
    - 1.2.1. Having to build a new economy
    - 1.2.2. Challenge of developing new supply chains
  - 1.3. Importance of finding a market
  - 1.4. Keeping in mind the business model
    - 1.4.1. Include parties that contribute to the creation of a business model
    - 1.4.2. Long term perspective for farmers
- 2. Collaborative dynamics
  - 2.1. Consensus seeking
    - 2.1.1. Have similar goals
    - 2.1.2. Mutual gains
    - 2.1.3. Invest in each other's perspectives
      - 2.1.3.1. Connect to the wish of other participants
      - 2.1.3.2. The barrier of looking from your perspective
      - 2.1.3.3. Make interest clear
      - 2.1.3.4. Explain each other things
      - 2.1.3.5. Go out into the field
      - 2.1.3.6. Take on the farmers perspective
    - 2.1.4. Search for a compromise
  - 2.2. Dialogue
    - 2.2.1. Stay in conversation
    - 2.2.2. Stay in conversating with the farmers
    - 2.2.3. Open up a dialogue
  - 2.3. Executive power
    - 2.3.1. Limited amount of parties
      - 2.3.1.1. barrier of parties that slow down
      - 2.3.1.2. Veto-players
    - 2.3.2. Involve people with a relevant network
    - 2.3.3. Involve commercial parties
    - 2.3.4. Pragmatism
      - 2.3.4.1. Involve practical knowledge
      - 2.3.4.2. Stay close to practice
      - 2.3.4.3. Thinking solution-oriented
  - 2.4. Inclusivity
    - 2.4.1. Barrier of excluding parties
    - 2.4.2. Barrier of excluding future land users
    - 2.4.3. Including the local community
    - 2.4.4. Combining both open and inclusive selection of participants
    - 2.4.5. Involve participant early on
  - 2.5. Motivation
    - 2.5.1. The desire to learn
    - 2.5.2. Awareness among farmers
    - 2.5.3. Political support
    - 2.5.4. Leadership
      - 2.5.4.1. Leadership from an organization

- 2.5.4.2. Personal commitment
- 2.5.5. Agreement on importance and urgency
- 2.5.6. Include motivated parties
- 2.6. Norms and rules
- 2.6.1. Acceptive of difference in opinions
- 2.6.2. Establish rules
- 2.6.3. Give credits to partners
- 2.6.4. Respect each other
- 2.6.5. Take the other serious
- 2.6.6. Give each other what they deserve
- 2.6.7. Make hard agreements
- 2.6.8. Hierarchical organization
- 2.6.9. Ability to have an open dialogue
- 2.6.9.1. Showing what is truly on people's mind
- 2.6.9.2. Make topics negotiable
- 2.6.9.3. Space for everyone's voice and share
- 2.6.10. Flat organization structure
- 2.7. Organisation
- 2.7.1. Barrier of not well-organized farmers
- 2.7.2. Coordination
- 2.7.2.1. Neutral coordination
- 2.7.2.2. Independent facilitators and advisors
- 2.7.3. Organisational Leadership
- 2.7.3. Ability to make definitive choices
- 2.7.4. Internal organization of individual parties
- 2.7.5. Success of farmers cooperatives
- 2.8. Reflexivity
- 2.8.1. Dynamic process
- 2.8.2. Bring insight to the development of phases of acceptations and emotions
- 2.8.3. Refine focus
- 2.8.4. Learning of the process itself
- 2.8.5. Hold a mirror up to ourselves
- 2.8.6. Mirroring ideas
- 2.8.7. Making adaptions during the process
- 2.9. Resources
- 2.9.1. Financial budget
- 2.9.1.1. Availability of a budget
- 2.9.2. Knowledge
- 2.9.2.1. Barrier of a lack of knowledge
- 2.9.2.1.1. Lack of knowledge on markets
- 2.9.2.1.2. Not knowing which knobs to turn
- 2.9.2.2. Knowledge exchange and bundling
- 2.9.2.3. Independency of knowledge
- 2.9.2.4. The convincing power of knowledge
- 2.9.2.5. Role of science
- 2.9.2.5.1. Reliability of science
- 2.9.2.5.2. The impact of research and future scenarios
- 2.9.2.5.3. Scientific coordination and guidance
- 2.10. Time
- 2.10.1. Time is limited
- 2.10.2. Dealing with stakeholders is time-consuming

- 2.10.3. Building a relationship requires time
- 2.10.4. The success of balancing time investment and depth
- 2.10.5. Structural change requires a lot of time
- 2.11. Trust
  - 2.11.1. Barrier public sentiment
  - 2.11.2. Barrier of the previous history of bad collaboration
  - 2.11.3. Interhuman relations
    - 2.11.3.1. The barrier of not having the right person
    - 2.11.3.1. Sense of Unity
    - 2.11.3.2. Knowing each other well
    - 2.11.3.3. Include people that are trusted within a community
    - 2.11.3.4.Build a relationship
      - 2.11.3.4.1. Building trust
    - 2.11.3.5. Feeling safe
    - 2.11.3.6. Trust between sets of people
  - 2.11.4. Independent contact point
  - 2.11.5. Trust between governments
  - 2.11.6. Trust in government
  - 2.11.7. Previous bad history of policies
  - 2.11.8. Changes of governors and civil servants
- 3.External environmental factors
  - 3.1. History and public sentiment
    - 3.1.1. Barrier public sentiment
    - 3.1.2. Barrier of previous history of bad collaboration
    - 3.1.3. Previous bad history of policies
  - 3.2. Initiation of a collaboration
    - 3.2.1. Bottum-up
    - 3.2.2. Importance of a crisis for initiation
      - 3.2.2.1. Creativity is born from urgency
    - 3.2.3. Urgency build through climate accords
  - 3.3. Physical conditions and factors
    - 3.3.1. Barrier of high land prices
    - 3.3.2. Availability of water
- 4. Integrality
  - 4.1. Complexity of the problem
    - 4.1.1. The barrier of needing much different types of knowledge
    - 4.1.2. Lack of a general solutions
    - 4.1.3. Lack of a single problem owner
    - 4.1.4. Many problems coexisting within the issues of subsidence
  - 4.2. Integrated approach
  - 4.3. Nuanced message
    - 4.3.1. Experimenting leads to nuance
    - 4.3.2. Diverse teams
    - 4.3.3. Include social and cultural aspects
    - 4.3.4. Not only tell the success story but also the about the fails
  - 4.4. Tension and conflict
    - 4.5. Integrality as an obstacle
    - 4.6. Taking a critical stance
- 5. Multi-level governance
  - 5.1. Adaptive governance
    - 5.1.1. Barrier of bureaucracy

- 5.1.2. Barrier of European regulations
- 5.1.3. Involvement of politicians and governors
- 5.1.4. Flexibility
  - 5.1.4.1. Iterative process
- 5.1.4. Link between national and local
- 5.1.5. Compartmentalization
- 5.2. Local scale
- 5.2.1. Importance of protection of landscape elements
- 5.2.2. Importance of local implementation
  - 5.2.2.1. Making trade-offs visible
- 5.2.3. Local ambassadors
- 5.2.4. Local executive power
- 5.2.5. Local examples
- 5.2.6. Tailor-made governance
- 5.3. Policy instruments
- 5.3.1. Balance between carrot and stick
- 5.3.2. Barrier of not having instruments available
  - 5.3.2.1. Need for coercive instruments
  - 5.3.2.2. Lack of coordinating instruments
- 5.3.3. Financial incentives
- 5.3.4. Role of financing
  - 5.3.4.1. Need for government spending
  - 5.3.4.2. Take away risks
- 5.4. Predictability and clarity from governance
- 5.4.1. Central coordination
- 5.4.2. targets are unrealistic
- 5.4.3. Tell the true story
- 5.4.4. Long term vision
- 5.4.5. Societal goals are contrasting
- 5.4.6. Ministry and province are the directors
- 5.4.7. Success factor of governments adopting a single stance
- 5.4.8. Political will and power
- 5.4.9. Provinces are still searching for their role
- 6. Transition
- 6.1. Anchoring
- 6.1.1. Cognitive anchoring
  - 6.1.1.1. Awareness
    - 6.1.1.1.1. Good external communication
- 6.1.2. Dare to look into the future
- 6.1.3. Institutional anchoring
- 6.1.4. Network anchoring
  - 6.1.4.1. Collaboration led to new initiatives or collaborations
- 6.1.5. Pilot paradox
- 6.1.6. Think early on about the next phase
- 6.2. Difficult process of change
- 6.2.1. Barrier of the whole system that needs to change along
- 6.2.2. Changes are too big
- 6.2.3. Need to make small steps
- 6.2.4. Slow process of ripening
- 6.2.5. New generations
- 6.2.6. Pioneers
- 6.2.7. Seeking a balance between ambitions and reality