



The puzzle of (in-)action

A master's thesis on explaining what drives stakeholder (in-)action in establishing governance systems that are conducive to nature-inclusive dairy farming

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Abstract

The intensive character of the Dutch agricultural system puts heavy pressure on biodiversity and ecosystem functioning. Nature-inclusive farming is an extensive approach that can offer farmers a perspective for the future whilst maintaining the value from ecosystems. However, in the dairy sector nature-inclusive farming has a relatively low uptake due to 5 key issues. These are: the lack of a uniform and shared vision (1), missing structural rewards for societal services (2), limited financial action-perspective for farmers (3), narrow knowledge transfer (4) and resistance from the current system (5).

Stakeholders can mitigate these barriers by performing key actions. This research investigates the motivation behind stakeholder (in-)action in performing the key actions necessary for promoting nature-inclusive governance systems. In total 13 interviews were conducted with stakeholders ranging from government, market and civil society. The research finds only 2 cases of action opposed to 12 cases of inaction. The first key action that was taken is: creating specific indicators for nature-inclusive farming. Here key performance indicators were implemented on a provincial-level which offer a foundation for formulating concrete goals and aid in quantifying the value of societal services derived from nature-inclusive farming thus increasing farmer's ability to capture this value in their business models. This therefore helped tackle key issues 1, 2 and 3. The second key action that was taken is: showing the viability of alternative business models by experimentation in practice. Here a project from Urgenda offers farmers discounted prices on nature-inclusive practices (herb-rich grassland) and provides the necessary knowledge to engage with this, therefore stimulating practical cultural change. This thus contributed to tackling key issues 3, 4 and 5. This research concludes that the reasons for inaction are varied but that the existing institutional setting is the most prominent driver of inaction. As the existing institutional setting is reflective of embedded practices from the system, it can be concluded that the agricultural system promotes inaction and thereby reinforces itself. Additionally, there is a pattern in which stakeholders explain their inaction by ascribing it to systemic barriers (key issues) rather than reflect on their own internal motivation or capabilities. This framing reduces the need for individual stakeholders to perform key actions by shifting the focus from individual stakeholders' responsibility to a more abstract sense of collective responsibility in facilitating systems change.

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1. Introduction

In the Netherlands primary agriculture (the direct production of agricultural goods) added about 11 billion euros to the Dutch economy in 2019, amounting to 1,4% of the total gross domestic product (CBS, 2020). These numbers reflect an ongoing trend in which the output volume of Dutch agricultural products has been increasing; growing 15% in terms of value to the economy in the period from 1999 to 2009 and another 10% from 2009 to 2019 (CBS, 2020). 2 factors that contribute to the overall size and growing economic strength of Dutch agriculture are scale enlargement and intensification. Through processes of land consolidation and changes in infrastructure and water management, many smaller more extensive agricultural businesses made space for larger intensive farms scaling-up their operations (CBS, 2017). In addition, these scaling activities were often accompanied by a shift towards further intensive land-use. Even though the agricultural sector has had a positive financial impact on the Dutch economy, there are also ecological drawbacks that have come from these trends. IPBES (2018) establishes that changes in land-use, including for the purpose of agriculture, is the major direct driver for biodiversity loss. Whilst the total amount of land allocated to agricultural purposes in the Netherlands has decreased over the years, it still covers 49% of the total surface area. Due to the intensive character of Dutch agriculture and its large-scale of operations, land management still poses a problem to biodiversity (Vermunt et al., 2022). Losing biodiversity as a result of intensive land-use has hampered the functioning and resilience of ecosystems and therefore diminished the ability of nature to provide society with valuable ecosystem services (Van Doorn et al., 2016).

Farming in Europe, and in the Netherlands specifically, contributes to biodiversity loss as its associated intensification has been accompanied with increased use of pesticide, more nitrogen and sulphur depositions, habitat fragmentation and homogenisation of the landscape through the creation of monocultures and removal of landscape aspects such as ditches and hedges (Geiger et al., 2010; Hanski 2015; Tanis, Marshall, Biesmeijer & Van Kolfshoten, 2020). This consequently has caused declines in (the services of) pollinators insects such as bees and the plant species which depend on them to reproduce (Biesmeijer et al., 2006; Potts et al., 2010; Ståhls, 2022) and decreased the populations of various meadow birds (CLO, 2023).

The degree to which an ecosystem is able to effectively function is related to biodiversity. If biodiversity in a specific area decreases than this can hamper ecosystem functioning (Jochum et al., 2020). Therefore, in order to safeguard biodiversity, and by extension ecosystem functioning as a whole, nature-inclusive farming has been put forth in the Netherlands as an alternative farming method in an attempt to better integrate biodiversity into agricultural business operations. Whilst the exact definition of nature-inclusive farming can sometimes somewhat vary from person to person, it has three foundational aspects. Nature-inclusive farming focusses on stimulating biodiversity, lessening the impact of agricultural activity on nature and safeguarding ecosystem services in order to extract their potential value (EZ, 2014; in: Van Doorn et al., 2016)

The problem, however, is that the uptake of nature-inclusive farming has been relatively low. Sitting between 2 and 15% depending on how stringent one defines a nature-inclusive business. Whereas 15% of agricultural businesses engage in at least some additional nature-inclusive activities, only 2% has fully included nature into the core of their business model (Vakblad Natuur Bos Landschap, 2020).

Previous research on the topic of nature-inclusive farming has shed light on some of the current barriers that might explain the low degree of adaptation. Vermunt et al. (2022) identifies 5 distinct constraining factors for implementing nature-inclusive agriculture. Firstly, there are missing financial incentives. There is an unlevel playing field since on the one side negative externalities resulting from conventional agriculture are not sufficiently penalized whilst there are limited rewards for the positive effects of nature-inclusive farming. A second problem is the limited action perspective of farmers. This means that farmers often do not have the financial flexibility and budget to move towards nature-inclusive farming. The third problem is the lack of a shared and concrete vision. Creating a vision for nature-inclusive farming has been hard due to complexity in interactions between biodiversity and the pluriform agricultural landscape as well as the ambiguity in policy orientation (focus on production versus ecological considerations). Another challenge are the obstacles to knowledge transfer. The previously mentioned complexity in addition to insufficiently integral and liberal regulations have led to a situation in which farmers are limited in their ability to gain knowledge on the subject of nature-inclusive farming. Finally, there is the issue of regime resistance. A regime represents the dominant paradigm on how a system ought to function. Currently, Dutch agriculture is characterized by a regime that favours production scaling and growth which are embedded into contemporary institutional practices, leading to lock-ins for the Dutch food system. This has led to an export oriented food system in which farmers are steered towards high input- and capital intensive business operations with the goal of creating a high output for agricultural goods, effectively also limiting the flexibility of farmers to decide their own production scale and supply chain structure due to market pressures (Runhaar et al., 2020). In this system contemporary institutional practices are reinforced whilst niche innovations that fall outside these boundaries such as nature-inclusive farming are required to fight an uphill battle.

The previously mentioned constraints are key issues for the low uptake of nature-inclusive farming. The current dominant regime has developed strong governance structures around a focus on intensification of production. Here governance structures are defined as the embedded characteristics of, and interactions between, institutions and actors within the system (Vatn, 2010; in Albert et al., 2019). Nature-inclusive farming on the other hand has yet to develop strong governance structures that align stakeholders around the goal of nature conservation. As emphasized by Runhaar (2017), the adoption of nature-inclusive farming is not going to occur on its own without the implementation of effective governance arrangements. The adoption of nature-inclusive farming is not solely the responsibility of the farmer, but rather that of the broader range of stakeholders from the government, market and civil society that are involved in governing the agricultural system.

It should be noted that the Dutch agricultural sector has a pluriform character. Agricultural businesses in the Netherlands range from crop to livestock farming. Within these archetypes there are also differences. Crop farming, for example, can focus on a variety of different crops and can be done on a field or in a greenhouse. Livestock farming on the other hand can be subdivided into the type of animals that are kept such as: poultry, pigs and cattle and the kind of agricultural products including: eggs, meat and dairy that are produced. Differences in the type of agricultural business has implications for the practical implementation of nature-inclusive measures. Actions that are impactful for a livestock farmer might not work in the case of a crop farmer or a livestock farmer that tends different animals. Therefore, in order to demarcate a useful scope for the research that allows for more concrete conclusions, this research focusses on dairy farming specifically.

The dairy sector is representative of the agricultural sector in sense that it reflects the intensive character of Dutch agriculture. Grassland for cattle takes up around 25% of the total national surface area, the average livestock density is four times higher than that of other European countries and the Netherlands ranks fourth in terms of milk production (Vermunt et al., 2022). The dairy sector also mirrors the relatively low uptake of nature-inclusive farming that is prevalent in the rest of the sector. Research suggests that less than 10% of dairy farmers is nature-inclusive (Bouma, Koetse, Polman & Brandsma, 2019). However, as implied earlier, the dairy sector is not entirely representative of Dutch agriculture as a whole. What nature-inclusivity means can vary on a practical level for different types of agricultural businesses. Additionally, other segments of the agricultural sector face different challenges in terms of existing policy, markets and other contextual factors (Smits et al., 2020).

Runhaar et al. (2020) highlighted the enabling conditions that are required in order to overcome the previously described key issues preventing the uptake of nature-inclusive farming in the context of the dairy sector. It was concluded that there was a need for: creating a uniform and concrete vision, instating structural rewards, making transition funds available, facilitating independent education and initiating cultural change. Stakeholders are able to take action as to promote these enabling conditions which are conducive to a nature-inclusive governance system. Such actions are referred to as key actions. Here this research comes into play as it establishes the problem statement that it currently remains unclear to what extent stakeholders are willing and able to carry out key actions. The focus of this research is therefore on finding out which topics stakeholders find important and why they are (un-)able to perform actions in this context. The corresponding research question becomes: *“What explains stakeholder (in-)action in performing the key actions necessary for promoting nature-inclusive governance systems?”*.

This research gains scientific relevance as it addresses a gap in knowledge on realising effective governance systems for nature-inclusive dairy farming. It builds upon previous scientific work that has described key issues in establishing governance systems (Vermunt et al., 2022) and action that is conducive to nature-inclusive governance systems (Runhaar et al., 2020) by reflecting on why relevant stakeholders take, or refrain from taking, necessary actions. In addition, it adds to the broader body of scientific knowledge on nature-based solutions (Canet-Martí et al., 2021; Seddon et al., 2020) by exemplifying the challenges that related approaches, such as nature-inclusive agriculture, face in the context of Dutch dairy farming. This is important as there is a dual sense of social urgency. On the one side biodiversity in the Netherlands is heavily pressured by intensive agriculture requiring it to be safeguarded in order to preserve the value that it adds to society. Whilst on the other hand farmers need to be able to make a living in a system that currently disadvantages nature-inclusivity. Thus, it is also of societal relevance to research the barriers and opportunities that stakeholders experience in taking responsibility for necessary action as it allows for a better understanding on what is needed to resolve key problems associated with setting up nature-inclusive governance systems in general and for the dairy sector specifically.

2. Theoretical framework

The theoretical framework consists of 2 parts. The first part aims to explain what nature-inclusive farming is and provides a conceptual model that contextualizes the most important concepts for this research. The second part of this chapter is focused on diving deeper into the specific concepts that are provided in the conceptual model.

2.1 Nature-inclusive farming

As mentioned in the introduction, there is not a strict demarcation for what can be considered nature-inclusive, rather there is a focus on three dimensions along which farmers, policymakers and other relevant stakeholders are able to shape and develop the concept. Nature-inclusive farming focusses on stimulating biodiversity, lessening the impact of agricultural activity on nature and safeguarding ecosystem services in order to extract their potential value (Van Doorn et al., 2016). It can be observed that these dimensions are interconnected according to their underlying principles. Nature-inclusive farming should firstly “employ ecosystem services rather than external inputs” but also “minimize environmental pressures” and “contribute maximally to ‘non- functional’ biodiversity and landscape quality” (Runhaar, 2021). Due to their interconnectedness these principles help reinforce each other in order to create the foundation for a resilient system that can offer viable business models (Erisman, Van Eekeren, Cuijpers & De Wit, 2014). These aspects culminate into figure 1 which gives an overview of how nature-inclusive farming should be conceptualized.

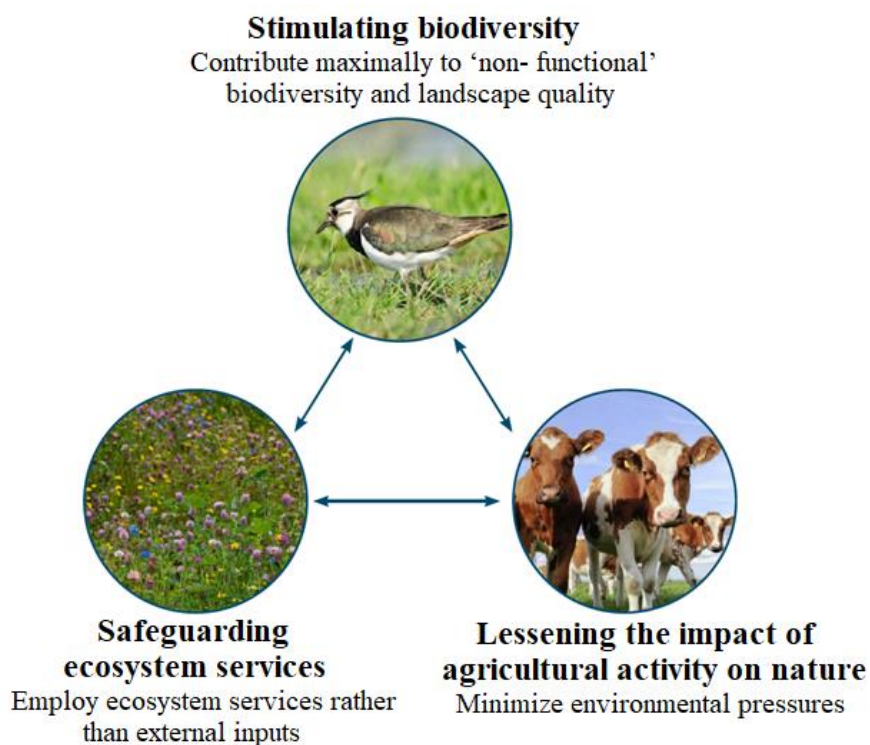


Figure 1: the three dimensions of nature-inclusive farming and their underlying interconnected principles (synthesis of: Van Doorn et al., 2016 & Runhaar, 2021)

Applying nature-inclusive farming in practice can mean a variety of things. There are a broad range of measures that can be taken in order to be more nature-inclusive such as: the introduction of more diverse landscape elements like ditches, trees, shrubberies and herbs giving the opportunity for more organisms to flourish (Erisman et al, 2017). Certain options are sometimes also bound to specific types of agriculture. Crop farmers can tackle the “minimize environmental pressures” dimension by making farmland less toxic for insects by reducing the use of pesticides or having a no till policy as to contribute to ‘non- functional’ biodiversity and landscape quality by virtue of not disturbing the soil. More relevant to this research, dairy farmers have the unique option to expand grazing times for their animals whose manure, in turn, help fertilize the soil. Additionally, it is possible to protect meadow bird nesting or transition towards (fully) grass feeding cattle (Westerink, et al., 2021). But it is not only the type of agricultural business that changes the dynamic of nature-inclusive farming. Regionality, the differences in the physical and social fabric between places, also plays a role. Farmers operating on peat land are, for example, able to rise water levels in order to foster specific biodiversity that flourishes under wetter conditions (Erisman et al., 2017).

It should be noted that nature-inclusive farming is not the only attempt at creating a more sustainable agricultural system, nor is it the first one. Some other notable approaches to sustainable agriculture are agroecology, organic agriculture, regenerative agriculture and circular farming (see figure 2).

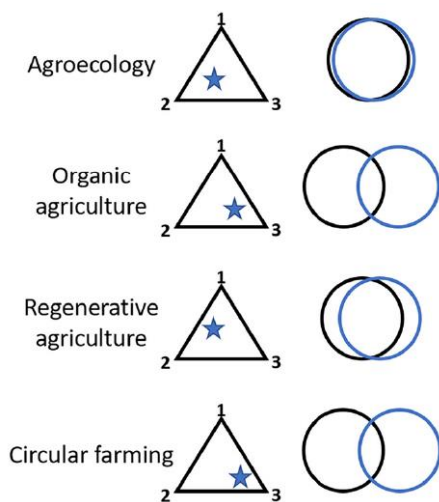


Figure 2: other prevalent sustainable approaches to agriculture compared to nature-inclusive farming (Vermunt et al., 2022); triangles represent the three dimensions as seen in figure 1 and circles show the amount of overlap with nature-inclusive farming

Compared to other approaches, agroecology has the most overlap with nature-inclusive farming, both focussing on safeguarding the local ecology. In organic agriculture stimulating biodiversity is not a core dimension, but rather an indirect effect of lessening the impact of agricultural activity on nature. In the case of regenerative agriculture soil conservation is seen as the main driver that safeguards ecosystem services. This approach also has an expanded scope on sustainability that includes explicit economic and social goals. Finally, circular farming is mostly concerned with closing nutrient cycles, therefore lessening the impact of agricultural activity on nature (Vermunt et al., 2022).

2.2 Conceptual model

The conceptual model can be found in figure 3 below. The starting point of this model is the current agricultural regime. Here, in box I the regime is conceptualized as the dominant paradigm on how the agricultural system ought to function. The regime comes with its own governance structures, which are the embedded characteristics of, and interactions between, institutions and actors within the system (Vatn, 2010: in Albert et al., 2019). This includes policy contents, institutional design as well as the distribution of responsibilities and power between actors. Governance structures from the current regime have created a situation in which 5 key issues can be identified that prevent nature-inclusive farming from being adopted on a larger scale by farmers (Vermunt et al., 2022). These key issues are: a lack of a uniform and shared vision, missing structural rewards for societal services, limited financial action-perspective for farmers, narrow knowledge transfer and resistance from the current system. This is represented by box II. Box V represents a situation in which these key issues have been resolved by means of providing governance structures that are conducive to nature-inclusive farming. In other words, governance structures in this situation enable the adoption of nature-inclusive farming practices.

In order to reach the situation of box V, stakeholders will need to undertake certain actions (Runhaar et al., 2020). These specific actions are called key actions and are represented in box III. However, not all stakeholders are willing or able to take action that tackles key issues. This is where box IV comes into play. It represents the focus of this research, namely, the motivation behind stakeholder (in-)action. To explain stakeholder (in-)action the research has employed an explanatory framework which includes 6 factors that help explain why stakeholders do or do not take action. These factors are: physical circumstances, physical and social infrastructure, existing institutional setting, discourse, characteristics of agency and shock events (Hegger, Runhaar, Van Laerhoven, & Driessen, 2020). Explanatory factors can reflect both stability or change. If a factor is reflective of inaction (the red dotted line) than this can be seen as contributing to the stability of the current agricultural regime (box I). Action (the green dotted line), on the other hand, reflects change which creates movement towards a nature-inclusive governance system (box V).

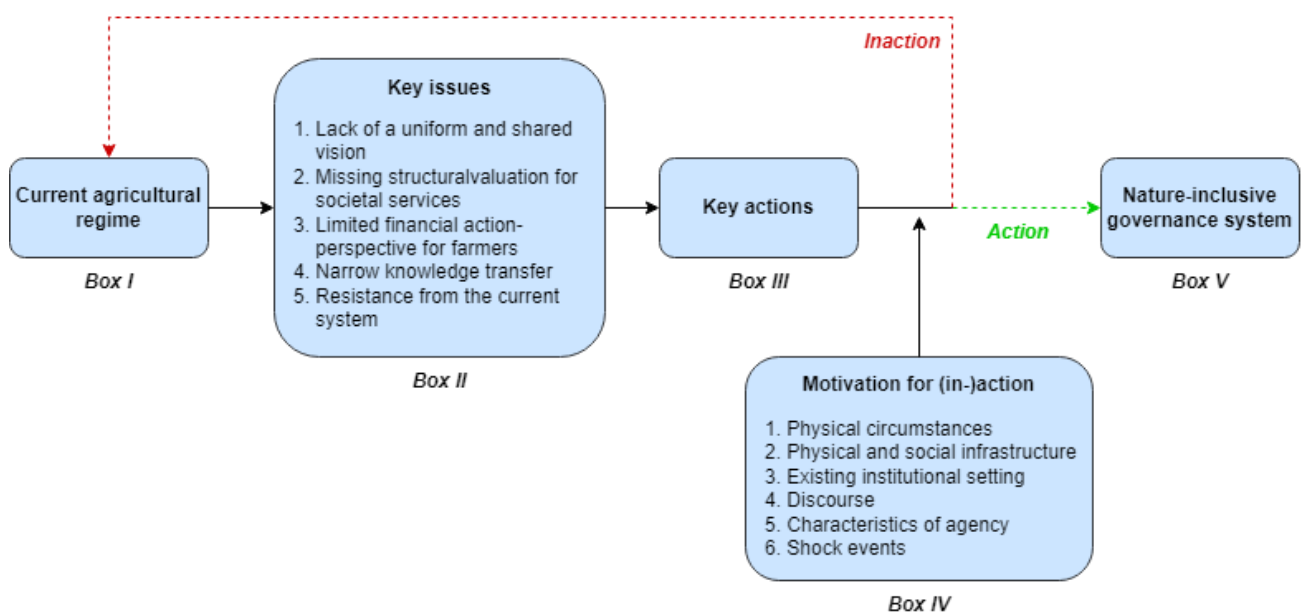


Figure 3: the conceptual model containing the most important concepts for this research

As mentioned before, the main objective of this research is explaining the motivation for stakeholder (in-)action in taking key actions that move the sector towards governance systems that are supportive of nature-inclusive dairy farming. Before being able to analyse the motivations behind (in-)action, it is important to understand what actions are being referred to specifically. Therefore section 2.3: “contextualizing action in terms of key issues” is dedicated to describing the key issues from box II as well as their associated key actions from box III. By doing this, the research contextualizes key actions that stakeholders could take for each of the key issues. This effectively operationalizes the term action which consequently enables it to be put into the explanatory framework that helps understand the motivation behind stakeholder (in-)action. The explanatory framework and its indicators are discussed in more depth in section 2.4: “explanatory framework for (in-)action”.

2.3 Contextualizing action in terms of key issues

The following sections will have its contents divided into 3 smaller sub-paragraphs. The first paragraph explains what the key issue entails. The second paragraph highlights the key actions that the Dutch ministry of Agriculture, Nature and Food Quality (Landbouw, Natuur and Voedselkwaliteit; or LNV) started with in 2020. Finally, the third paragraphs points out the additional key actions that are still required to be taken and which type of actor could theoretically do this.

2.3.1 Key issue 1: Lack of a uniform and shared vision

The first key issue has to do with the fact that there is no clear long-term vision that is shared among stakeholders. Whilst the principles of nature-inclusive farming have been made clear, what exactly these principles imply in terms of concrete goals and indicators has not yet sufficiently crystalized. The formulation of a concrete vision is also hampered by the scope of nature-inclusive farming which needs to consider the entire context of the agricultural sector, which is characterized by its pluriformity. There are differences in terms of scale of business operations as well as what type of agricultural activity they engage in and soil types. Small or large-scale farmers with crops may face different challenges when it comes to safeguarding biodiversity than those who have livestock, and vice versa. Farmers working on peat land, for example, also have different considerations when it comes to fostering biodiversity than those located on more clay rich soils (Vermunt et al., 2022; Runhaar, 2021).

In 2020, LNV started formulating a plan of action for a circular vision on agriculture. In addition to this, the sector was being addressed to show leadership in helping facilitate the transition towards more extensive forms agriculture. LNV also started cooperating with decentral government in order to set ambitions on a provincial level. This is important as the previously described regional differences require ambitions to be tailored to the specific context of different areas. Finally, LNV is putting effort into the extensification of agricultural land, especially around nature conservation areas (Runhaar et al., 2020).

What is still needed is to create clarity on the role of nature-inclusive agriculture within a circular vision. For guiding the transition process it is essential for governmental actors to shape such a vision (Smits et al., 2020). Expanding upon this, national government should involve provinces and the sector in order to work together and set enforceable and concrete goals, and by extension, create specific indicators and targets that cover the different agricultural contexts (Runhaar et al., 2020).

2.3.2 Key issue 2: Missing structural rewards for societal services

The second key issue for farmers to adopt nature-inclusive practices is the missing structural rewards for societal services. Implementing nature-inclusive farming measures contributes positively to biodiversity, adding to the resilience and therefore stability of ecosystems. The consequent societal value derived from ecosystem services (biodiversity, pollination and carbon storage for example) are not incorporated into the price of agricultural products. There are no structural policies which financially reward business activities that add value through ecosystem services nor is there policy that financially punishes those who deteriorate ecosystems and the value that they offer to society. Capturing value from nature-inclusive farming therefore has limited opportunity, creating an unlevel playing field in which nature-inclusive farmers are disadvantaged (Vermunt et al., 2022; Runhaar et al., 2020).

In 2020, LNV's focus was put on having conversations with relevant stakeholders and doing research on how to incorporate societal value into products. In terms of communication, dialogue was being organized between supply chain actors in order to find opportunities to include a broader range of value into their products. In addition to this, regional produce was being promoted to consumers. Effort has also been put into researching options for compensating sustainable investments such as offering subsidies for sustainable innovations and reviewing policy to stimulate a circular vision. Finally, setting up and standardizing reward mechanisms for safeguarding biodiversity was put forth as a priority with a true costing model (which includes positive and negative externalities into the price of goods) being explored as a potential option (Runhaar et al., 2020).

What is still needed are concrete and binding agreements on rewarding activity that creates societal value based on established targets. Due to the public aspects (non-excludable and non-rivalrous) of societal value that is gained from nature-inclusive farming, the government should be the primary party to reward farmers (Vink & Boezeman, 2018). However, there is also a role for market actors to financially contribute by, for example, creating labels that offer farmers a price premium for nature-inclusive products (Vermunt et al., 2022). Stacking rewards in this way means that the government and market share the expenditure which alleviates some of the financial burden for both parties. Alternatively, true costing can be implemented in order to punishes intensive agriculture whilst rewarding extensification, creating a more level playing field for competition (Runhaar et al., 2020).

2.3.3 Key issue 3: Limited financial action-perspective for farmers

Another key issue is the limited financial action-perspective for farmers. This issue highlights that due to financial considerations farmers have limited agency in engaging with nature-inclusive farming. The average farmer experiences financial constraints due to high indebtedness, often resulting from high land prices and previous investments into intensification as conform to mainstream agricultural regimes that focus on expanding production and growth. This issue is exacerbated for farmers that lease land, since these short-term contracts are not conducive to long-term strategies such as nature-inclusive farming (Vermunt et al., 2022; Runhaar et al., 2020).

In 2020, LNV made funds totalling to an amount of 175 million euros (LNV, 2021), as well as land for extensification, available in order to facilitate the transition towards agricultural circularity. Options for expanding the action-perspective by rewarding nature-inclusive farmers was being explored. Furthermore, long-term leasing arrangements for agricultural land were being stimulated and obstructing policy was being removed. Conversations with banks were held to find additional financing options. Finally, regulatory bodies were being deployed in order to strengthen the position of the farmer in the supply chain (Runhaar et al., 2020).

What is still needed is making funds available to finance a broader range of farmers beyond the frontrunners. This includes having farmers that would need to quit, instead transition towards nature-inclusive farming. These funds can be arranged by either the government, banks, or a combination of both in the form of co-financing (Bouma, Koetse, Polman & Brandsma, 2019; Farjon et al., 2018). Additionally, long-term sustainable land leasing and a stronger position for farmers in the supply chain should be legally embedded by the national government (Runhaar et al., 2020).

2.3.4 Key issue 4: Narrow knowledge transfer

The fourth key issue is that there is a narrow transfer of knowledge. Nature-inclusive farming is a complex topic and relevant information remains scattered among stakeholders. Currently, there are limited independent entities that offer to educate farmers on the topic of nature-inclusivity, which has led to farmers remaining in the dark as to what knowledge is required for implementing effective nature-inclusive measures. Additionally, nature-inclusive farming as a subject is also not fully integrated into the agricultural schooling system (Vermunt et al., 2022; Runhaar et al., 2020).

In 2020, LNV committed to ongoing investments into knowledge on biodiversity and soil. This knowledge serves as the foundation for indicators for biodiversity and soil which were being created. A start had also been made to include nature-inclusive farming into agricultural education. Additionally, effort was put into stimulating the emergence of more practice-oriented knowledge by establishing living labs. Lastly, in order to support farmers to effectively transition, independent business advisors were trained and the main online learning platform (Groen Kennisnet) was being redeveloped (Runhaar et al., 2020).

What is still needed is integral knowledge development for nature-inclusive farming. More focus should be put into independent education and agrarian education should pay explicit attention to shifting the current paradigm. These actions can be taken up centrally by governmental actors, but also by more decentral civil society actors, such as knowledge institutions (Cuperus, Smit, Faber & Casu, 2019). Lastly, it is important that knowledge creation is explicitly linked to a shared vision on nature-inclusive farming and structural reward mechanisms in order to effectively tackle key issues (Runhaar et al., 2020).

2.3.5 Key issue 5: Resistance from the current system

The last key issue pertains to the resistance from the current system. The production-focused regime offers (financial) certainty and aligns with incumbent interests. Coordinated action to promote nature-inclusivity is too limited to create a large-scale shift in the current system, therefore insufficiently incentivising and inspiring farmers to transition towards nature-inclusive farming beyond niche groups (Vermunt et al., 2022; Runhaar et al., 2020).

In 2020, LNV held conversations with a broad range of stakeholders such as supply chain partners, consumers, farmers and government in order to find options to improve the rewards for farming activities. Effort was also being put into showing the viability of alternative business models by facilitating experimentation in practice (Runhaar et al., 2020).

What is still needed is a focus on stimulating a lobby for nature-inclusive farming and inspiring leadership that frames nature-inclusivity as part of good agricultural practice (Runhaar et al., 2020). The main goal of this is to initiate some form of cultural change. This can be arranged by civil society actors in the form of organisations that represent farmers collectively, but also by means of governmental actors engaging in political lobbying (Westerink, De Boer, Pleijte & Schrijver, 2019).

2.3.6 Key issues and actions summarized

Table 1 gives an overview of all key issues and their associated key actions. The first column of key actions displays the actions that LNV started working on in 2020. The next 2 columns show the key actions that are still needed and which actor type(s) can theoretically play a role in taking responsibility for key actions.

Key issue for farmers	Key actions that LNV worked on in 2020	Open key actions	Actor type
1. Lack of a uniform and shared vision	<ul style="list-style-type: none"> - Addressing the sector to show leadership - Cooperation with decentral government - Extensification of agricultural land, especially around nature conservation areas 	<ul style="list-style-type: none"> - Create clarity on the role of nature-inclusive agriculture within a circular vision on agriculture - Working together with the sector and government to set enforceable concrete goals & by extension create specific indicators and targets that covers the different agricultural contexts 	Government
2. Missing structural rewards for societal services	<ul style="list-style-type: none"> - Researching options for compensating sustainable investments, such as offering subsidies for sustainable innovation - Bringing together consumers and farmers - Promoting regional produce 	<ul style="list-style-type: none"> - Create concrete and binding agreements on rewarding business activity that creates societal value based on established targets - And/or; implement true costing to punishes intensive agriculture whilst rewarding extensification 	Government Market
3. Limited financial action-perspective for farmers	<ul style="list-style-type: none"> - Transition fund for circularity in agriculture - Researching and promoting stacking rewards - Making land available for extensification - Stimulating more long-term leasing arrangements - Having conversations with banks for finance options - Strengthening the position for the farmer in the supply chain - Removing obstructing policy 	<ul style="list-style-type: none"> - Make transition funds available for more farmers and not just for frontrunners - Make funds available for farmers that want to quit extensive farming to transition to nature-inclusive farming - Jurisdictional embedding of long-term sustainable land leasing and giving the farmer a stronger position in the supply chain 	Government Market Civil Society
4. Narrow knowledge transfer	<ul style="list-style-type: none"> - Investing in knowledge on biodiversity and soil - More practice-oriented knowledge; creating living labs - More education on nature-inclusivity - Redeveloping online knowledge platform - Training independent business advisors - Creating indicators for biodiversity and soil 	<ul style="list-style-type: none"> - Take responsibility for integral knowledge development - Provide more independent education - Pay explicit attention to shifting paradigm in agrarian education - Explicitly link knowledge to a shared vision on nature-inclusive farming and structural reward mechanisms 	Government Civil Society
5. Resistance from the current system	<ul style="list-style-type: none"> - Having conversations with the supply chain and bringing together a broad range of stakeholders from the supply chain, consumers, farmers and government - Showing the viability of alternative business models by facilitating experimentation in practice 	<ul style="list-style-type: none"> - Focus on stimulating a lobby and inspiring leadership that frame nature-inclusive as part of good agricultural practice 	Government Civil Society

Table 1: a summary of the key issues and actions associated with nature-inclusive governance (Runhaar et al., 2020)

2.4 Explanatory framework for (in-)action

Whereas the previous paragraphs have described key issues and actions, this paragraph will focus on providing the explanatory framework for why stakeholders do, or do not, perform key actions. This research will make use of the framework put forth by (Hegger, Runhaar, Van Laerhoven, & Driessen, 2020). Their framework makes use of 6 categories of explanatory factors for stability and change in governance. These aid in explaining (in-)action as the implicit causes for actors to either take or do not take action become more explicit as they need to be connected to the provided explanatory factors. Additionally, systematically utilizing the explanatory factors allows for better comparability between this and other research.

2.4.1 Physical circumstances

The physical circumstances relate to the physical parameters that are relevant to what is being studied. For this study there are 3 main physical aspects to consider, which are: the type of agricultural business, the type of soil and the location of the business. These aspects are relevant as they relate to the pluriformity of the sector. Different types of agricultural businesses have a differing ability to change as some engage in crop farming whilst others have livestock to consider. Additionally, some farms are small in scale whereas others can have more sunken costs due to operating on a larger scale. There is also the physical factor of the present soil. Businesses located on peat land, for example, can have other priorities for fostering biodiversity than farms located on clay rich soils (Vermunt et al., 2022; Runhaar 2021). These differing contexts can also have implications for policymakers. National and provincial government, for example, need to consider these regional factors in taking action that relates to creating and enforcing visions and policy that are fitting and effective. If harmonizing these differences into concrete visions and policy are deemed too challenging, then the differences in physical circumstances can lead to inaction from these governmental actors.

2.4.2 Physical and social infrastructure

The physical and social infrastructure can be seen as infrastructures that are constructed by humans. For this study relevant infrastructures are the supply chains that have been set up for the agricultural sector and the knowledge infrastructures that have been created (such as knowledge hubs and formal education). Having strong infrastructures can create stability as they reinforce the practices for which they were instated, potentially also leading to lock-ins. The relative underrepresentation of nature-inclusive agriculture (and other sustainable approaches) in agricultural education can be seen as an example of a knowledge-based infrastructure that favours stability of the current system and disincentivises change towards governance systems that are conducive to nature-inclusive farming. This can create inaction in farmers and other market actors as they lack the necessary knowledge to effectively experiment with nature-inclusive farming methods.

2.4.3 Existing institutional setting

The existing institutional setting reflects the rules, norms and strategies that are embedded into the governance system. This can be categorized into the 3 factors: polity, politics and policy. In this context polity relates to procedures and rules that are used to govern, politics refers to the way in which stakeholders are positioned in terms of their relationship towards each other and their individual power and policy includes the available policy instruments (Lange et al., 2013). They constitute the playing field for governance and therefore influence the degree of stability. Here a higher degree of institutionalized practices creates a more stable governance systems with less opportunity for change. Taking action, in the context of the existing institutional setting, can be disincentivised as any stakeholder that acts outside the institutional norm (of which extensive agriculture is exemplary) is associated with uncertainty and (legal) risks.

2.4.4 Discourse

Discourse pertains to “the views and narratives of the actors involved (norms, values, definitions of problems and approaches to solutions)” (Lieverink, 2006: p.47; in Hegger, Runhaar, Van Laerhoven & Driessen, 2020). This factor highlights the influence that stakeholders can exert on the governance dynamics by means of rhetoric. Stakeholders are able to frame problems as well as formulate solutions. Therefore, speech and written text can be instruments for both change and stability depending on the nature of the norms and values on which they are constructed. If, for example, actors frame intensive agriculture and biodiversity loss as a problem and suggest nature-inclusive farming as a solution, then this can motivate stakeholders to create change by performing key actions.

2.4.5 Characteristics of agency

The characteristics of agency shed light on the ability of individual stakeholders to act autonomously. There is a mutual relation between agency and the existing institutional setting, as agency reacts to, and acts within, the institutional playing field (polity, politics and policy). It should be noted that agency can create both change or stability. Because, depending on the motivation of individual stakeholders, they can decide to create change by performing key actions as well as resist change by not performing these action or enact actions that reinforce the existing institutional setting. Stakeholders from civil society, for example, can feel intrinsically motivated to create a more sustainable society. If they deem that the current system is resisting change, than they can utilize their own agency to take action that benefits the adoption of more sustainable alternatives such as nature-inclusive farming.

2.4.6 Shock events

The last explanatory category are shock events. These events can be physical like a forest fire or non-physical such as an economic crisis. Both of the previous examples are forms of external shocks whereas something like conflict expansion between stakeholders would be considered an internal shock (Real-Dato, 2009). The impact of shocks on governance systems can go both ways as the rapid change associate with shocks can close and open windows of opportunity for change. A sudden economic crisis can make experimentation with, and funding for, nature-inclusive farming a lower priority, therefore inhibiting stakeholders’ incentive and ability to perform key actions. On the contrary, a sudden extinction of an animal species might sway public opinion in favour of nature-inclusive farming which can create the opposite situation in which key actions are performed more easily.

2.4.7 The complete framework

Table 2 represents the complete framework for systematically explaining stakeholder (in-)action by means of explanatory factors and their associated indicators.

Explanatory factor	Indicators
1. Physical circumstances	<ul style="list-style-type: none"> - Type of soil - Type of agricultural business (crops or livestock, small or large-scale) - Location of the business
2. Physical and social infrastructure	<ul style="list-style-type: none"> - Knowledge infrastructures - Supply chain infrastructures
3. Existing institutional setting	<ul style="list-style-type: none"> - Stakeholder constellation (polity) - Institutional features (politics) - Content of polities (policy)
4. Discourse	<ul style="list-style-type: none"> - Norms and values - Problem definition - Solution definition
5. Characteristics of agency	<ul style="list-style-type: none"> - Existing actors utilizing strategy to stabilize or change governance systems (polity, politics, policy)
6. Shock events	<ul style="list-style-type: none"> - Physical shocks - Non-physical shocks - Internal shocks - External shocks

Table 2: summary of explanatory factors and their indicators (Hegger, Runhaar, Van Laerhoven, & Driessen, 2020).

3. Methodology

3.1 Research design

This research has taken a qualitative approach as explaining the motivation behind (in-)action pertains to the degree to which certain stakeholders prioritise, and have the ability to, solve key issues, which requires in-depth descriptions. The 6 explanatory factors from the theoretical framework assist in creating a systematic approach to the analysis. These indicators serve to explain the motivations behind stakeholder (in-)action which is contextualized using the key issues. Because these key issues cover a variety of different themes, combined with the fact that different actor types (governmental, market and civil society) give their perspective on (in-)action, it is a requirement to structure data effectively. This research does so by harmonizing data in topics, which are clusters of data about recurring subjects. Whilst every topic is linked to a key issue, this is not a strict demarcation as some topics can overlap multiple key issues.

The research question: *“What explains stakeholder (in-)action in performing the key actions necessary for promoting nature-inclusive governance systems?”*, can and needs to be subdivided into the following sub-questions:

“What topics are important to stakeholders for each key issue?”

“Why are stakeholders (un-)able to take action on key issues?”

For the most part, this research is deductive in nature as the theoretical framework already proposes a systematic approach for analysing (in-)action for key actions by applying the explanatory factors for stability and change. There is some degree of inductive reasoning since the observations made from the data are determinative for the identified topics that are important to stakeholders.

3.2 Data collection

For its data collection the research made use of triangulation. This method utilizes cross-referencing from different sources in order to gather data (Bryman, 2016). The first part of collecting data consists of desktop research. This includes sources such as policy documents and written statements which help understand stakeholders' role and position in the agricultural system, therefore assisting in contextualizing what potential action they can take. Additionally, this contributes to the second part of collecting data which was done by conducting semi-structured interviews. Desk research helped by allowing for preliminary adjustments to the interviews, making questions more relevant to the stakeholder that is being interviewed. Table 1, from section 2.3.6: *“key issues and actions summarized”* served as the foundation for the semi-structured interviews. The key issues helped structure the interview along different themes (vision, structural rewards, etc.), whereas the questions were directly related to key actions. These semi-structured interviews have been done with relevant stakeholders (see section 3.3: *“stakeholders”*) from the Dutch dairy system and aim to answer the proposed sub-questions mentioned previously.

As mentioned, the questions that were asked during the interview were based on the presented key actions. In first instance stakeholders were asked if progress was, or is being, made regarding a specific action. After this, stakeholders were asked to what extent they took action and the reason as to why they did or did not act. Additionally, stakeholders were encouraged to provide their perspective on who ought to take action and why they presumed others did or did not act. This way stakeholders could position themselves and other stakeholders in terms of who should be responsible for taking action. Explicitly asking about (in-)action also lessened the chances of incorrectly interpreting statements, adding to the objectivity and therefore trustworthiness of the research (Bryman, 2016).

3.3 Stakeholders

The next paragraphs will discuss the sampling methods that were employed for this research, as well as provide a brief description and relevance of interviewed stakeholders. After this a table is presented which gives an overview of all stakeholders and the total amount of interviews that were conducted. This section concludes with a reflection on the representativity of the sampled stakeholders.

3.3.1 Sampling

The sampling strategy for the semi-structured interviews made use of a purposive sampling method. Meaning that respondents will be selectively chosen based on a specific criteria (Bryman, 2016). In this case that meant that people who are involved in, and are knowledgeable of, the Dutch dairy sector as well as represent a group of relevant stakeholders, have been sampled. For the selection of stakeholders it is important to get a good mix of different actor types in order to create a more accurate representation. This research has therefore incorporated different organizations from the government (ministry, province and waterschap) as well as the market (corporation and bank) and civil society (NGO, farmer group, research institute and knowledge platform). It should be noted that this research has also utilized some degree of snowball sampling. Whilst the organizational types were purposefully selected, the specific interviewees from the ministry and provinces were approached via a contact from the ministry.

3.3.2 Governmental stakeholders

Ministry: The Dutch ministry is a national legislative body which is responsible for creating, checking and abolishing policy. There are multiple ministries for different societal topics. For this research the ministry of Agriculture, Nature and Food Quality (Landbouw, Natuur and Voedselkwaliteit; or LNV) is relevant as they relate to nature-inclusive farming from a perspective of both agriculture as well as nature. They are responsible for the national vision and policy on these topics and are therefore a relevant stakeholder. Because of their central role in developing a national vision, policy and financial programs, LNV is relevant to all 5 key issues (Runhaar et al., 2020).

Province: The Netherlands consists of 12 provinces, which are the level of government between the central government and municipalities. Spatial planning requires balancing of (among others) environmental and agricultural concerns. Implementation of nature conservation and agricultural policy is for a large part the responsibility of provinces, therefore making them relevant stakeholders. For this research specifically, the provinces Brabant and Drenthe were chosen as they are already actively engaging and experimenting with nature-inclusive farming. Similarly to LNV, provinces are relevant to all 5 key issues due to the fact that they are responsible for the actual implementation of a vision, policy and financial programs on a provincial level (Silvis, Schrijver & Jellema, 2022).

Waterschap: The waterschappen (plural) are governmental water management bodies. Their role is to manage risks such as floods and safeguard water quality and quantity. Since agricultural businesses have to deal with water-related issues (such as runoff from fertilizer and managing water levels) there is a relevant relationship with waterschappen where water-related responsibilities overlap. For this research, Waterschappen Brabantse Delta and Noorderzijlvest were chosen due to them being located in the provinces that were interviewed (Brabant and Drenthe respectively). Waterschap Rivierenland was chosen because it represented the area where Platform Nature-inclusive Agriculture Gelderland, which was also interviewed, is active. The overlapping responsibilities in water-related issues make waterschappen relevant to key issue 2: missing structural rewards for societal services, as water-related services can create potential new (financial) reward mechanisms. Because actually facilitating potential cooperation with nature-inclusive farmers is important, key issue 1: lack of a uniform and shared vision also becomes relevant to waterschappen (Silvis, Schrijver & Jellema, 2022).

3.3.3 Market stakeholders

Corporation: For the dairy sector in the Netherlands FrieslandCampina plays a significant role, being the largest (cooperative) dairy corporation in the Netherlands and a big player worldwide. Around two-thirds of all Dutch farmers are associated with them (Nolles, 2023), making them a relevant stakeholder representing farmers' business interest in both national as well as international markets. The primary key issue that is relevant to FrieslandCampina is key issue 2: missing structural rewards for societal services. FrieslandCampina has the potential to assist in rewarding nature-inclusive farmers by, for example, instating labels that offer price premiums to associated farmers (Vermunt et al., 2022).

Bank: Banks play an important role in offering financial means to agricultural businesses through multiple methods of financing. The Rabobank is especially relevant since the overwhelming majority, more than 80% (Rabobank, 2023), of farmers have a loan at this specific bank. Since nature-inclusive farming requires (co-)financing, key issue 3: limited financial action-perspective from farmers, is especially relevant to the Rabobank (Bouma, Koetse, Polman & Brandsma, 2019).

3.3.4 Civil society stakeholders

NGO: Urgenda was involved in this research as a non-governmental organization because of their 1001 Hectares of Herb-rich Grassland project (also called: 1001ha). This project uses crowdfunding to help farmers finance and experiment with sowing herb-rich grassland as to lessen their ecological impact, befitting a nature-inclusive approach to agriculture. In the context of their 1001ha project, Urgenda offers knowledge and more favourable financial conditions, enabling practical experimentation which is necessary in creating cultural change (Westerink, De Boer, Pleijte & Schrijver, 2019). They therefore address key issues 3: limited financial action-perspective from farmers, 4: narrow knowledge transfer and 5: resistance from the current system.

Farmer group: An important interest group is the Dutch Agricultural and Horticultural Organization (Land- en Tuinbouw Organisatie Nederland; or LTO). They are the central advocacy group for the Dutch agricultural sector and therefore play a significant role in civil society by representing farmers' interests. The specific interviewee from this group was also affiliated with the 1001ha project. Due to their close association with farmers, farmer groups offer some leverage in creating cultural change in agricultural practices and additionally have the ability to collectively lobby for nature-inclusive farming (Westerink, De Boer, Pleijte & Schrijver, 2019). Therefore LTO is relevant to key issue 5: resistance from the current system.

Research institute: The Dutch Wageningen Universiteit & Research (WUR) is a public university and research institute that specialises in agriculture. Their knowledgeability on the subject of agriculture as a whole and nature-inclusive farming specifically offers insights for this research, making them a relevant stakeholder to consider. Additionally they gain relevance as they are the primary supplier of knowledge to LNV. WUR already possesses a relatively large amount of existing knowledge on nature-inclusive farming which gives them the ability to play a relevant role in key issue 4: narrow knowledge transfer, by finding means to effectively convey this information to others (Cuperus, Smit, Faber & Casu, 2019).

Knowledge platform: Knowledge transfer is an important topic for nature-inclusive farming. Platform Nature-inclusive Agriculture Gelderland (Platform Natuurinclusieve Landbouw Gelderland; or PNLG) is an example of an organization that provides all actor types (governmental, market and civil society) with relevant theoretical and practical information regarding nature-inclusive farming. It is a collaboration between a variety of actors from civil society and is funded by the province Gelderland. As their primary role is providing information to other stakeholders, PNLG is relevant to key issue 4: narrow knowledge transfer (PNLG, 2019).

3.3.5 Stakeholders summarized

Table 3 below is a summary of all stakeholders that were interviewed. These are grouped based on their actor and organizational type. In addition to this the total amount of interviews are displayed per stakeholder.

Actor type	Organizational type	Stakeholder	Key issue	Interviews
Governmental	Ministry	Agriculture, Nature and Food Quality (Landbouw, Natuur en Voedselkwaliteit), <i>LNV</i>	1-2-3-4-5	2
	Province	Brabant	1-2-3-4-5	2
		Drenthe		
	Waterschap	Brabantse Delta	1-2	3
		Noorderzijlvest		
		Rivierenland		
Market	Corporation	FrieslandCampigna	2	1
	Bank	Rabobank	3	1
Civil Society	NGO	Urgenda	3-4-5	1
	Farmer group	Dutch Agricultural and Horticultural Organization (Land- en Tuinbouw Organisatie Nederland), <i>LTO</i>	5	1
	Research institute	Wageningen University & Research, <i>WUR</i>	4	1
	Knowledge platform	Platform Nature-inclusive Agriculture Gelderland (Platform Natuurinclusieve Landbouw Gelderland), <i>PNLG</i>	4	1
				Total: 13

Table 3: summary of all stakeholders and total amount of interviews that were conducted

3.3.6 Representativity of the sample

In order to have a sample that represented the different stakeholders involved in the dairy sector, this research chose to sample a variety of different organizational types ranging from: governmental, market and civil society actors. Additionally, the research remained consistent in terms of sampling actors that were relevantly related to each other. The sampled waterschappen, for example, were chosen due to them being located within the sampled provinces or in the case of Waterschap Rivierenland, proximity to PNLG's area of focus. Relatedness was not only limited to physical proximity, as the WUR for example, was chosen because they have a direct relation with LNV, being their primary supplier of knowledge.

It is important to note that the data, and therefore results, from this research do not represent the dairy sector in its entirety, rather it offers insights into a specific part of this system. Results should therefore not be generalized further than the scope of the research context. For example, 2 provinces were chosen, whilst the research was consistent in choosing waterschappen that were located within these provinces, results are only representative of these specific provinces due to differing spatial context between provinces (soil types, financial means, policy, culture, etc.). It can also be argued that in this research the market is underrepresented since relevant stakeholders such as supermarkets are not directly included. Other stakeholders do speak on the perceived role that supermarkets should take, but there was no opportunity to gain a deeper understanding of the supermarkets' perspective on (in-)action.

3.4 Ethical considerations

There are 2 main ethical considerations that come with conducting interviews. The first is that it is important to have informed consent. This means that the interviewee will need to be informed about the true nature and scope of the research and that they give explicit consent to being recorded and displaying their personal information such as their name (Bryman, 2016). It is also important to guarantee the right of every interviewee to retract any of their statements in case they endanger their wellbeing. Additionally, in order to ensure data security, if an external party wants to gain access to the interview recordings a formal request will be sent to the stakeholder that was interviewed. Access will only be granted after the stakeholder gives explicit consent for sharing this data.

4. Results

The results chapter follows a structure in which each key issue has its own sub-chapters presenting relevant topics that were identified from the interviews with stakeholders. Here topics represent thematic data clusters relating to key issues. Each topic is analysed using the explanatory framework as presented in the theoretical framework in table 2 and finishes with its own sub-conclusion. Relevant explanatory factors are displayed in *italic*.

4.1 Lack of a uniform and shared vision

4.1.1 Targets for nature-inclusive farming

As mentioned before, there is no clear long-term vision that all stakeholders align with in terms of the role of nature-inclusivity within the Dutch agricultural system. From an interview with LNV it became apparent that there are still no specific goals set for nature-inclusive farming in terms of its national scope, nor are these in the making. The *existing institutional setting* creates inaction, as the focus in policy contents of LNV, provinces and waterschappen remains on keeping nature-inclusivity more accessible to a broader group of farmers by letting them perform actions that farmers themselves deem to fit their capability rather than adhere to government-set goals. This lower threshold for nature-inclusivity promotes farmers to engage with smaller scale actions which are often less costly. Whilst this means that more farmers can potentially experiment with nature-inclusive farming on a lower level (at for example the edges of their land), the non-committal aspect does not help promote long-term strategy development for a higher level of nature-inclusivity that seeks to (fully) integrate its principles into an agricultural business. This non-committal strategy in promoting nature-inclusive farming demonstrates that LNV and the provinces have thus far been unable to perform the key action of setting enforceable and concrete goals.

Political *discourse* also explains some inaction due to nature-inclusive farming's positioning in terms of problem and solution definition. Rather than creating specific targets for nature-inclusive farming itself, it is employed as a means of reaching overarching national nature and climate goals that are formulated in documents such as the National Strategy on Spatial Planning and the Environment (Nationale Omgevingsvisie) and Deltaplan Agricultural Watermanagement (Deltaplan Agrarisch Waterbeheer). In this sense promoting nature-inclusive farming is not defined as a goal in and of itself, but rather a contribution to solving nature and climate goals. During the interview with LNV it was acknowledged that, in order to reach these overarching goals, more businesses with a higher level of nature-inclusivity are needed. It was also made clear that creating an environment which enables farmers to more intensively integrate nature-inclusive principles into their business, in turn, will supposedly require stakeholders to focus more on regional development.

In conclusion, due to the non-committal approach in setting goals for nature-inclusive agriculture, governmental actors were unable to perform the key action of setting enforceable and concrete goals. The lack of a uniform and shared vision is reinforced by the absence of concrete goals for nature-inclusive farming specifically. Inaction here is caused by the *existing institutional setting* in which policy tools for nature-inclusive farming are non-enforceable and political *discourse* which frames nature-inclusive farming as a means for overarching nature and climate goals and not as a goal in and of itself.

4.1.2 Regional development

From the interviews it seems that governmental actors favour an area-oriented approach in developing regions. Doing so allows for the implementation of more targeted measures that consider local context and combine societal challenges (climate, agriculture, economic, social, etc.). One of the key actions that targets combined challenges is that of the extensification of agricultural land, especially around nature-conservation areas. This action was being worked on by LNV in 2020 and is now also being addressed by a broader range of stakeholders in regional development processes. All people that were interviewed considered nature-inclusive farming to be a fitting development scenario for agricultural land that neighbours nature-conservation areas since policy on protecting nature is already more stringent here disincentivising more intensive forms of agriculture. Even though both provinces, all waterschappen and FrieslandCampina were engaging in a form of regional development, they were unable to sufficiently fulfil the key action of extensification of agricultural land.

The reason for this was that facilitating regional development in practice comes with its own challenges, especially in more conventional areas where nature-related restrictions do not apply. One example of such challenges was presented by FrieslandCampina. During the interview a case was brought up in which FrieslandCampina was a stakeholder in the process of regional development. This specific area had the challenge of balancing land use for nature, agriculture and housing. During the process of defining a shared development plan with local stakeholders governmental actors made the sudden decision to reserve around half of the area for the purpose of housing, which resulted in demotivation among other stakeholders. These strategic decisions are indicative of *characteristics of agency*. Here agency thus resulted in a neglect of the sensitivity of cooperative processes and a lack of room and time to develop them. It also caused a *shock event*, in which cooperative relations suddenly ceased which consequently culminated in a barrier to action that was further reinforced by a deficient trust in government. Waterschap Noordzijvest faces a similar problem. In the process of waiting for approval of submitted plans, some land ends up being bought and repurposed by various parties ranging from governmental to market actors. In this sense, from the interviews, agriculture appears to have a relatively low priority when it comes to allocation of available space compared to other purposes such as the government creating new roads or economic considerations like expanding airports. Therefore *physical circumstances* in the form of land availability also motivate inaction in the key action of extensification of agricultural land. This is further affirmed in the interview with province Brabant where it is explained that historically (and also currently) agriculture often ends up being the supplying party for land to more capital intensive entities related to, for example, working and housing. Finally, another problem faced in facilitating regional development was discussed by waterschap Brabantse Delta. They noticed that the *existing institutional setting* led to inaction as, in the projects where they were the leading party, managing the process whilst considering stakeholder constellation was very resource and time intensive. In cases where plans did materialize it sometimes also occurred that institutional features blocked progress as there was a mismatch with higher levels of government, leading to the plans being rejected. In these cases the distrust among stakeholders is further reinforced, requiring even more resources and time to be allocated in order to restore this trust.

All in all, the governmental and market actors involved in facilitating regional development have been insufficiently able to tackle the key action of extensification of agricultural land due to facing a wide array of challenges in regional development. Powerful stakeholders utilize *characteristics of agency* in order to further their own agendas which can sometimes also result in a *shock event* where development plans and cooperation suddenly cease or are significantly hampered. This contributes to a lower degree of trust among stakeholders and a more resource intense process. The *existing institutional setting* also causes inaction as parties steering cooperation find stakeholder management challenging and sometimes experience conflicts with higher levels of government. Finally, *physical circumstances* explain some of the tension as land availability in general is an important concern for spatial planning. In this context agriculture is often deprioritized in an institutional setting which is especially limiting as, in order to facilitate the extensification required for nature-inclusive farming, more land will need to be made available for farmers.

4.1.3 Key performance indicators

Ultimately the goal of nature-inclusive farming is to put less stress on surrounding ecosystems and safeguard biodiversity. One thing that all those who were interviewed could agree upon was the need for quantifying nature-inclusiveness and measure impact. The most prominent tool that people brought up or recognized was the so-called Biodiversity Monitor. This tool includes 7 key performance indicators (KPIs) that are related to safeguarding and stimulating biodiversity on a dairy farm. The initiative was created by actors from both the market and civil society. Steps to integrate KPIs for monitoring and rewarding nature-inclusive farmers are being made. Provinces Drenthe and Brabant have started to use KPIs from the Biodiversity Monitor in practice. Brabant, for example has started the Brabantse Biodiversiteitsmonitor Melkveehouderij (Brabant's Biodiversity Monitor Dairy Farm) project in 2022. Here farmers set their own ambitions and are financially rewarded based on how they perform on KPIs. The integration of these projects that utilize KPIs into the *existing institutional setting* by provinces has motivated practice-oriented experimentation with these KPIs, which helps further develop them as well as embed the use of KPIs into standard practice. This is reflected by the fact that, in cooperation with LNV, 13,5 million euros has been made available to expand the project and scale from 191 participating farmers to 700. In this sense, *the existing institutional setting* has actually motivated both provinces as well as LNV in the key action of creating specific indicators for nature-inclusive farming.

It however became clear that this is not the only methodology that was used in order to measure impact. The *existing institutional setting* also creates inaction as Province Drenthe and LTO, for example, pointed to the European Common Agricultural Policy (Gemeenschappelijk Landbouwbeleid) where existing KPIs are not yet integrated, creating a mismatch between policy and rewarding tools. Both parties stress the importance of utilizing a single methodology on all levels of government (local, provincial, national and international) as to have a common language in order to set concrete goals and help steer and reward farmers more effectively. Stakeholders have been unable to harmonize all KPIs across different projects. This is partly due to LNV's inactivity in embedding KPIs into national and international policy and send a clear signal on which KPIs they expect the sector to use. Another reason for stakeholders to not fully integrate KPIs from the Biodiversity Monitor specifically, is due to *physical circumstances* that are relevant to 2 KPIs. These relatively expensive due to them requiring on-site inspections. Currently, the Rabobank is trying to improve the cost-effectiveness of these by means of developing remote sensing technology through satellite imaging that could replace on-site inspections.

Thus it can be concluded that the *existing institutional setting* has motivated both action as well as inaction regarding the key action of creating specific indicators for nature-inclusive farming. On the one hand embedding KPIs at a provincial level has allowed the *existing institutional setting* to be leveraged in order to expand practice-oriented experimentation with indicators. However, as LNV has not yet sufficiently integrated KPIs into a national vision, other stakeholders remain hesitant in harmonizing their KPIs and stick to varying methodologies. For 2 KPIs from the Biodiversity Monitor specifically, *physical circumstances* also motivate some inaction as these require expensive on-site inspection. This issue is being tackled by the Rabobank by exploring more cost-efficient remote sensing technology.

4.2 Missing structural rewards for societal services

4.2.1 The market for nature-inclusive farming

Promoting stacking rewards is one key action that calls upon both market as well as governmental actors to combine reward systems for nature-inclusive efforts. One way of rewarding farmers for their more sustainable products is to offer them a price premium. This way the lower total production and or extra costs can be compensated for by the market. This is already being done to some extent. FrieslandCampina for example, offers a higher price based on sustainable performance in their own “Foqus planet” program. In addition, farmers have the option to join the independent “On the way to PlanetProof” label. FrieslandCampina identifies that the first barrier here is that in order to qualify for a decent price premium, especially via labels, nature-inclusivity requires to be very explicit. In other words, the instruments used for price premiums (especially with labels) are focused on farmers achieving a level of nature-inclusivity that differentiates their products from others. This institutional practice reflects the *existing institutional setting* of how the market currently rewards farmers for nature-inclusive efforts. Whilst the *existing institutional setting* of market actors offers a starting point for rewarding farmers via the market, it also creates a reward structure where the benefits are disproportionally reaped by frontrunners, thus limiting action being taken on promoting (stacking) rewards for a larger segment of farmers.

A second limitation is the Dutch consumer market itself. *Characteristics of agency* play a significant role as, from the interviews with LNV and FrieslandCampina, it became apparent that Dutch consumer spends a relatively low amount of money on food compared to other countries. LNV indicates that consumers are willing to pay a premium of around 10 to 15% with it more likely being on the lower end. The Rabobank also highlighted that due to current high rates of inflation, which can be seen as an economic *shock event*, the willingness to pay a premium has lowered even further. These factors motivate inaction for market actors to perform the key actions of promoting (stacking) rewards and promoting regional produce, as the market for nature-inclusive products is currently not very large. As discussed previously, nature-inclusive farming is still a concept without strict demarcation. This causes problems due to the fact that there are currently many different labels for sustainability and their meanings can be confusing for consumers. Urgenda and PNLG therefore point to the need to further formalize nature-inclusive farming as to more effectively reward farmers and at the same time make nature-inclusive labels more well known to consumers.

Another barrier is related to the export oriented nature of Dutch agriculture. The willingness to pay a price premium for nature-inclusive products on an international market is even lower than for the domestic market. LNV and FrieslandCampina touch on this by explaining that this is mostly due to international *discourse* on sustainability. Safeguarding biodiversity and ecosystems is strongly localized, meaning that in general Dutch nature is not as important to an international consumer as to a Dutch person. Additionally, whilst CO₂ has become an important topic that both governmental agencies (such as the EU) and large market players (such as Nestlé) are willing to invest in, biodiversity and ecosystems at large are still not as prominent on the public agenda. International *discourse* which, in its problem definition, does not sufficiently highlight the importance of biodiversity has spilled over into limited market interest for nature-inclusive products. In turn this has motivated inaction for market actors to promote rewarding nature-inclusive farmers.

In conclusion, market actors have started to reward farmers for nature-inclusive products through price premiums. However, market actors have been unable to perform the key action of promoting regional produce as well as promoting (stacking) rewards beyond frontrunners as there is a limited market for nature-inclusive products. Here inaction thus stems from limited market incentives in the *existing institutional setting*. For the national markets this is mostly due to *characteristics of agency* as consumers generally prefer cheaper products. But inflation can also be seen as a macro-economic *shock event* that contributes to this. In international markets *discourse* that prioritises different aspects of sustainability also plays a role.

4.2.2 Rewarding societal services

Whilst extensification of agricultural land is beneficial to the functioning of ecosystems, productivity and therefore farmers' income is generally lower than for more intensive forms of agriculture. The economic value that farmers lose is mirrored by the ecological value that is added to society. Ecosystem services are similar to public goods because well-functioning ecosystems offer a variety of benefits that are non-excludable and non-rivalrous (such as carbon sinking and clean water) This non-excludable and non-rivalrous nature creates a barrier, as it is notoriously hard to integrate public goods into a market (Dwyer et al., 2015). Therefore, in addition to market actors, other actors such as LNV, the provinces and waterschappen also need to contribute to the key action of promoting stacking rewards.

The main barrier to the key actions of rewarding businesses for activity that creates societal value, and consequentially, promoting stacking rewards appears to be the *discourse* that governmental actors display regarding their role in financially compensating farmers. Even though there is limited financial room for the market to compensate farmers sufficiently for extensification, as also affirmed by LNV and FrieslandCampina in the interviews, governmental actors still put an accent on finding market solutions rather than utilize governmental budgets.

In practice some governmental actors have started with rewarding societal services. Whilst the following reward mechanisms are a good starting point, they do not offer the full value that farmers create for society when they engage with nature-inclusive farming. Provinces Brabant and Drenthe, for example, have similar pilot programs that offer farmers up to 5.000 euros per year. The amount depends on how well they score on a set of KPIs that are based on those found in the Biodiversity Monitor. In the interviews it was acknowledged that receiving the full amount was quite challenging. Waterschap Noorderzijlvest mentions that some waterschappen employ green-blue services that reward farmers for services that are beneficial to water quality and quantity. But there are admittedly few of such cases. Waterschap Rivierenland mentions exemption from water-taxes as a potential option, but are sceptical because this would reduce income for the waterschap. In general governmental actors seem sceptical or hesitant when it comes to direct financial compensation. The fear of LNV is that compensation, especially in the context of scaling-up nature-inclusive efforts, will create a situation in which there are excessive public expenditures on which farmers will structurally depend.

Governmental actors have taken some action in order to fulfil the key action of promoting stacking rewards. However, this action has been limited by *discourse* as in their definition for a solution, governmental actors put an accent on the role of market mechanisms in promoting stacking rewards and are reluctant to commit governmental budgets. *Discourse* also motivates inaction in the context of rewarding businesses for activity that creates societal value as it is deemed to be sufficient to only reward farmers for a part of the value that nature-inclusive agriculture offers to society.

4.3 Limited financial action-perspective for farmers

4.3.1 Risks

There are multiple key actions that pertain to providing funds for transitioning conventional farmers to be (more) nature-inclusive. Banks play an important role in financing. However, Rabobank experiences some degree of inaction in making funds available to farmers. Since the business models for nature-inclusive agriculture face more challenges than conventional farming methods, investment becomes a more risky proposition. This form of risk can be seen as the product of the *existing institutional setting*. This is reflected in the interviews with Rabobank and LTO where both parties point towards an uncertain long-term perspective for nature-inclusive endeavours as the root cause for this perceived risks. A prominent example of this was establishing long-term land leasing arrangements which would give farmers and therefore financiers more certainty in regards to their business model and income. LNV has proclaimed that long-term land leasing (12 years) is on its way and has been integrated into the new Landbouwakkoord (Agricultural Agreement) for 2023.

Another way in which the *existing institutional setting* creates risks for engaging with nature-inclusive farming is through obstructing policy. This is especially relevant for the key action of showing the viability of alternative business models by experimentation in practice. Throughout the interviews many different examples were given such as: being unable to set fixed prices for certain goods, certain organic substances not being usable as they were considered to be pollutants and restrictions on the amount of monetary governmental support that could be offered. The risk here, which leads to inaction, is that stakeholders can face legal trouble if they are to (accidentally) break any unforeseen rules. Province Drenthe points out that, even though there is a willingness and need to undertake action, there is still a risk facing legal problems. Whilst action is needed there is a dilemma of whom is to carry the risks and consequent (financial) repercussions in case a project does run into legal complications. The WUR and PNLG explain that in practice there is often more legal room than stakeholders think. Obstructing policy has been identified in Van der Schans & Van Beek (2020) which can help guide stakeholders' action and mitigate legal risks. It is therefore important to note that stakeholders can also strategically utilize *characteristics of agency* where obstructing policy becomes a means of positioning that legitimizes inaction regarding practice-oriented experimentation rather than a legitimate concern.

There has been inaction regarding key actions that are related to making funds available to farmers. For banks such as the Rabobank this inaction has been motivated by the *existing institutional setting*, which lacks a long-term perspective for nature-inclusive farming, making investment more risky. The *existing institutional setting* also creates inaction for practice-oriented experimentation as obstructing policy poses financial (risks) to involved stakeholders. However, it is necessary to note that stakeholders can also use perceived risks by employing *characteristics of agency* in order to strategically position themselves as to legitimize inaction in practice-oriented experimentation.

4.4 Narrow knowledge transfer

4.4.1 Knowledge development

Integral knowledge development is one of the key actions. In terms of the available knowledge there seems to be a consensus among stakeholders that all the required knowledge for nature-inclusive farming is present. Online resources and independent sustainability and business coaches are the main methods of getting information to farmers. When asked what was necessary to effectively transfer knowledge, the WUR, province Brabant and LTO explained that there needs to be an intrinsic demand from farmers to acquire this knowledge. The biggest barrier that these stakeholders point to are the lacking enabling conditions for farmers. In other words, inaction for integral knowledge development is motivated by an appeal to the *existing institutional setting* which does not provide the enabling conditions (or: a system that is conducive to nature-inclusive farming) required for farmers to seek out existing knowledge. This also implies that *discourse* plays a role in inaction, as the problem definition in knowledge development is shifted from knowledge creation itself towards more abstract notions of systems change, effectively reducing the need for individual stakeholders to take action. There seems to be a conviction that once institutional conditions are favourable that knowledge transfer will be no issue at all.

One more obstacle found in the knowledge development is that there is a disproportionate focus on conventional intensive agriculture. Therefore more education on nature-inclusive farming is an important key action. For this key action *social infrastructure* seems to be the main motivator for inaction. LNV identifies states that this is due to the fact that more money is being generated in the intensive segment of the sector, therefore leading to investments in educational content mostly focussing on intensive agriculture. This has created a *social infrastructure* in which vested interests between educational institutions and actors that benefit from intensive agriculture (such as fertilizer and animal feed companies) reinforce each other. Another barrier that is responsible for LNV's inaction in integrating more education on nature-inclusive farming stems from the *existing institutional setting*. In order to implement more sustainability related topics into agricultural education there is an independent commission that needs to approve the curriculum. This means that LNV cannot directly change the contents of education and can only exert indirect influence by means of lobbying.

Inaction in the key action of integral knowledge development has been motivated by an appeal to the *existing institutional setting*. There is a presumption that all required knowledge for farmers is available and that once enabling conditions are met knowledge transfer will be no problem. This highlights that *discourse* also plays a role in inaction, as the problem definition in knowledge development focusses on an abstract notion of systems change which reduces individual stakeholders' need to take action. LNV specifically also remains inactive in the key action of more education on nature-inclusive farming. One reason is that they are integrated into the *social infrastructures* to a lesser extent compared to vested (predominantly market) interests. A second motivator for inaction is the *existing institutional setting*, in which the presence of an independent commission slows down the implementation of a more sustainable curriculum. Both of these factors make integrating nature-inclusive farming in education take more effort from LNV's position.

4.5 Resistance from the current system

4.5.1 Good agricultural practice

One of the proposed key actions is to frame and promote nature-inclusive farming as good agricultural practice. This sentiment is shared across the interviewees that spoke on the topic. It is recognized that farmers are people who act from internal motivation. Urgenda highlights that farmers, like all people, are subject to cultural influences. Other farmers play a significant role in shaping this culture. It became apparent that *social infrastructures* are important. This was reflected in the notion that farmers value the opinions of colleagues more than experts with a limited practical background. This makes having role models or ambassadors for sustainability extra important, since such agents are better able to activate other farmers than, for example, a government. A barrier that was identified by LNV was that it is hard to find suitable ambassadors, as frontrunners are often far ahead of the rest of the sector in terms of integrating sustainable principles. This creates a gap that makes it hard for more conventional farmers to identify with potential ambassadors. Inaction for LNV in promoting nature-inclusive farming as good agricultural practice has thus been motivated by *social infrastructures* which require careful balancing between ambition and relatability of ambassadors. This problem appears to be exacerbated by *discourse* as, LNV has not yet been able to define a clear profile of a "standard" nature-inclusive farmer, making it harder to find a farmer that can be exemplary for others.

Setting new standards for agricultural good practice is not only done via instating ambassadors. In promoting nature-inclusive farming, provinces Brabant and Drenthe both focus on policy. They spend increasing amounts of effort on removing obstructing policy, as discussed previously. But they also actively reward farmers via new policy. Their rationale behind this is that changing policy in this manner steers the sector and sends a signal that farmers engaging with sustainability are performing as desired. However the main motivation behind inaction lies in the *existing institutional setting*, as the instruments that the provinces utilize in their attempts to promoting nature-inclusive farming as good agricultural practice have thus far only nudged farmers that already have some degree of pre-established motivation towards nature-inclusive farming. Whilst it is a step in the right direction towards creating a new conceptualization of good agricultural practice, reconceptualizing the *existing institutional setting* with more ambitious rewards mechanisms is needed in order to attract a larger segment of the sector.

In conclusion, attempts at promoting nature-inclusive farming as good agricultural practice has thus far been attempted by finding ambassadors and changing or creating policy. Inaction in finding suitable ambassadors for nature-inclusive farming is characterised by a barrier of *social infrastructure*, in which it is hard for conventional farmers to identify and therefore engage with frontrunners. But *discourse* also acts as a motivation for inaction because the exact form of nature-inclusive farming, and therefore the profile of a farmer that conducts good agricultural practice, has not yet sufficiently crystallized. Changing policy on the other hand has made some progress of steering farmers towards nature-inclusive farming. In the context of framing nature-inclusive farming as good agricultural practice, the *existing institutional setting* creates inaction, as the current rewards do not yet adequately reward nature-inclusiveness as to inspire a broader segment of farmers.

4.5.2 Practical cultural change

In a multitude of interviews the notion that farmers want to experiment with nature-inclusiveness first-hand came up. Exemplary of this is the 1001ha project. This project offers farmers a discounted price on herb-rich grassland so that they can more easily experiment with this nature-inclusive method of sowing which normally is more expensive and risky. In addition to this, they receive the necessary knowledge from the seed suppliers. It however still costs the farmer some money, creating a mutual investment which incentivises them to be as efficient as possible. Urgenda points to herb-rich grassland specifically as something which can offer societal value as well as lower costs for farmers by reducing the amount of fertiliser that they need to buy. In the interview, Urgenda referred to the project as a practical form of cultural change. In effect, Urgenda is contributing to the key action of showing the viability of alternative business models by experimentation in practice.

As noted in the interview with LTO, herb-rich seed mixes are a relatively niche product for seed suppliers. Scaling up would create a bigger market for herb-rich seeds which can consequently create more competition, leading to lower prices and more investment in sustainable alternatives from a supplier's perspective. But this is where the largest barrier to 1001ha comes into play, which is the fact that the project remains relatively small-scale and requires external funding in the form of donations. The biggest source of donations stems from governmental entities. The total amount of donations, however, have not been sufficient in scaling-up activities. This is where it becomes apparent that the motivation behind Urgenda's action is grounded in *characteristics of agency*. Urgenda is intrinsically motivated to take responsibility because they acknowledge the importance of an agricultural transition. This was exemplified in March of 2023 where Urgenda, without any formal obligations, donated 50.000 euros to the project themselves due to slow governmental funding.

All in all, 1001ha is a specific example of practical cultural change that contributes to the key action of showing the viability of alternative business models by experimentation in practice. By targeting market dynamics it fits with the current reluctance of governmental agencies to offer structural rewards for societal services due to the fear of scaling-up nature-inclusive efforts eventually leading to bloated budgets. Funding remains the biggest challenge for the project. Here it becomes clear that *characteristics of agency* is what motivate Urgenda's continued action, as they donated 50.000 euros without any formal obligations in order to keep the 1001ha project going.

4.6 Results summarized

It should be noted that, though topics have been linked to certain key issues, this does not necessarily reflect a strict demarcation. The most prominent example of this is the key performance indicators topic. Whilst this has been put under the key issue of lack of a uniform and shared vision, when examining Runhaar et al. (2020) it can also be argued to play a role in the missing structural rewards for societal services and limited financial action-perspective for farmers by virtue of KPIs' relation to creating indicators, concrete goals and associated reward systems. For the sake of structure and clarity the link to key issues was chosen based on numerical order in which they appear.

The results of this research have been compiled into table 4 below. Only 2 cases of action were found. Here the existing institutional setting and characteristics of agency both played a role in the motivation for action 1 time. For inaction on the other hand, 12 cases were identified. The motivation behind inaction was sometimes explained by a single explanatory factor whereas other times there were multiple explanatory factors involved. In total: the existing institutional setting appeared 9 times, discourse 6 times, characteristics of agency 4 times, shock events 3 times and social infrastructures and physical circumstances 2 times. Here the explanatory factor "physical and social infrastructure" from (Hegger, Runhaar, Van Laerhoven, & Driessen, 2020) is referred to as "social infrastructure" since no physical infrastructures were identified in the results.

Whilst the specific reasons for inaction were varied, something that stood out was that stakeholders would often refer back to systemic barriers (key issues) rather than reflect on internal motivation or capabilities in explaining inaction. In doing so stakeholders deflect some of their own individual responsibility by pointing towards a more abstract system and collective responsibilities. This was most explicit in describing inaction for integral knowledge development. Rather than reflect on concrete barriers relating to stakeholders' internal motivation and capabilities, the problem of inaction was deemed to be caused by a lack of enabling conditions, effectively shifting the focus towards a more abstract sense of collective responsibility in facilitating systems change.

Key issue	Topic	(In-)action in key action	Explanatory factors
1. Lack of a uniform and shared vision	Targets for nature-inclusive farming	Inaction: setting enforceable and concrete goals for nature-inclusive farming	Existing institutional setting: focus on voluntary and non-committal forms of nature-inclusive farming Discourse: problem and solution definition where nature-inclusive farming is a means of reaching overarching goals rather than a goal on its own
	Regional development	Inaction: extensification of agricultural land, especially around nature-conservation areas	Characteristics of agency: strategic action that neglects the sensitivity of cooperative processes Shock event: deficient trust due to cooperative failure Physical circumstances: deprioritising of agriculture in spatial planning due to limited land availability Existing institutional setting: high costs (resources and time) in facilitating regional development as leading party
	Key performance indicators	Action: creating specific indicators for nature-inclusive farming	Existing institutional setting: expanded provincial-level policy for practice-oriented experimentation motivated KPI-usage for performance and monitoring
		Inaction: creating specific indicators for nature-inclusive farming	Existing institutional setting: mismatch between policy and rewarding tools due to the usage of different KPIs Physical circumstances: expensive required on-site inspection for 2 KPIs
2. Missing structural valuation for societal services	The market for nature-inclusive farming	Inaction: promoting stacking rewards	Existing institutional setting: price premiums (especially via labels) require a level of nature-inclusiveness that differentiates products from other farmers limiting rewards for non-frontrunning farmers Characteristics of agency: low willingness to pay as Dutch consumers prefer cheaper food products Shock event: decreased willingness to pay due to recent high rates of inflation Discourse: relatively low ranking of biodiversity on the international public agenda
		Inaction: promoting regional produce	Characteristics of agency: low willingness to pay as Dutch consumers prefer cheaper food products Shock event: decreased willingness to pay due to recent high rates of inflation
	Rewarding societal services	Inaction: promoting stacking rewards	Discourse: accent on finding market solutions which appear limited in potential
		Inaction: rewarding businesses for activity that creates societal value	Discourse: rewarding only a part of the value nature-inclusive farming offers in terms of societal services is deemed sufficient

3. Limited financial action-perspective for farmers	Risks	Inaction: making transition funds available to more farmers	Existing institutional setting: risks due to an uncertain long-term perspective for nature-inclusive farming
		Inaction: showing the viability of alternative business models by experimentation in practice	Existing institutional setting: risk of legal trouble and (financial) repercussions due to breaking unforeseen rules Characteristics of agency: utilizing the existence of obstructing policy strategically to legitimize inaction
4. Narrow knowledge transfer	Knowledge development	Inaction: integral knowledge development	Existing institutional setting: appeal to absence of enabling conditions as the main driver for narrow knowledge transfer Discourse: abstract problem definition due to a focus on systems change rather than concrete actions
		Inaction: more education on nature-inclusivity	Social infrastructure: limited demand for nature-inclusive education due to vested interest between education and intensive agriculture which reinforce each other Existing institutional setting: changes in curriculum requires approval of an independent commission
5. Resistance from the current system	Good agricultural practice	Inaction: promoting nature-inclusive farming as good agricultural practice	Social infrastructure: need for careful balancing between ambition and relatability of nature-inclusive ambassadors Discourse: no clear profile of a “standard” nature-inclusive farmer Existing institutional setting: reward mechanisms are insufficiently ambitious
	Practical cultural change	Action: showing the viability of alternative business models by experimentation in practice	Characteristics of agency: Urgenda’s intrinsic motivation reflected by their financial donations to the 1001ha project

Table 4: summarized research results

5. Conclusion

The intensive character of the Dutch agricultural system has resulted in heavy pressure being put on biodiversity and ecosystem functioning as a whole. Nature-inclusive farming offers a more extensive approach to agriculture which can provide farmers with a perspective for the future whilst at the same time help maintain the value of ecosystems.

However, the research started off by establishing that there is a relatively low uptake of nature-inclusive farming in the Dutch dairy sector. This is the case because the current agricultural system presents 5 key issues that hamper the adoption of nature-inclusive farming, which are: the lack of a uniform and shared vision, missing structural rewards for societal services, limited financial action-perspective for farmers, narrow knowledge transfer and resistance from the current system. In order to create governance systems that are conducive to nature-inclusive farming, stakeholders need to perform key actions that tackle the root causes of these issues. However, it remained unclear as to why stakeholders did or did not take certain key actions. Therefore the research asked the question: *what explains stakeholder (in-)action in performing the key actions necessary for promoting nature-inclusive governance systems?*

The first sub-question, *what topics are important to stakeholders for each key issue*, helped structure the results by identifying clusters of data within key issues. It harmonized data and contextualized (in-)action by providing recurring themes that stakeholders deemed to be important. In total 9 relevant topics were identified. These are: targets for nature-inclusive farming, regional development, key performance indicators, the market for nature-inclusive farming, rewarding societal services, risks, knowledge development, good agricultural practice and practical cultural change.

For the second research question, *why are stakeholders (un-)able to take action on key issues*, the research found that there were a variety of reasons for (in-)action. Only 2 cases of action were identified, those being for the key actions: creating specific indicators for nature-inclusive farming and showing the viability of alternative business models by experimentation in practice. The key action of creating specific indicators for nature-inclusive farming was motivated by the existing institutional setting. This was due to an expansion of provincial-level policy that stimulated experimentation with nature-inclusive farming which required the implementation of KPIs as indicators for monitoring purposes. The creation and implementation of indicators is part of solving key issues 1 (lack of a shared and uniform vision) as it gives offers measuring tools that can act as the foundation on which to base concrete and enforceable goals. But this action also contribute to key issue 2 (missing structural valuation for societal services) as indicators offer a method for quantifying the value of societal services. Therefore key issue 3 (limited financial action-perspective for farmers) is also addressed since this consequently enables farmers to create stronger business models for nature-inclusive farming by means of capturing value from societal services.

The key action of showing the viability of alternative business models by experimentation in practice, on the other hand, was motivated by characteristics of agency. This was expressed by Urgenda's intrinsic motivation to keep their 1001ha project (exemplary of practice-oriented experimentation) going by means of financial donations. It contributes to key issue 3 (limited financial action-perspective for farmers) since the project enables more farmers to experiment with nature-inclusive farming by offering discounted prices on nature-inclusive practices (herb-rich grassland specifically). This key action also assists in solving key issue 4 (narrow knowledge transfer) as the project provides farmers with the necessary knowledge (directly from seed suppliers) required to engage with nature-inclusive practices. Additionally, it creates knowledge by activating farmers to participate in practical experimentation. Finally this key action tackles key issue 5 (resistance from the current system) since the project offers a form of practical cultural change that shows farmers the viability of nature-inclusive business models, potentially inspiring others to also start experimenting.

This research identified 12 cases for inaction. The motivation behind inaction was sometimes explained by a single explanatory factor whereas other times multiple explanatory factors were involved. In total: the existing institutional setting appeared 9 times, discourse 6 times, characteristics of agency 4 times, shock events 3 times and social infrastructures and physical circumstances 2 times. As observable in table 4, the implications of explanatory factors also vary depending on context. The existing institutional setting, for example, caused inaction in different ways. For the key action of extensification of agricultural land, inaction was motivated by the process of regional development which was resource intensive for leading parties. Whereas for the key action of promoting nature-inclusive farming as good agricultural practice the existing institutional setting expressed itself in a more instrumental way, motivating inaction by the presence of insufficiently ambitious reward mechanisms.

As an overall conclusion to the question of what motivates inaction, this research found that, even though the exact reasons for inaction varied, the existing institutional setting was the most prominent driver for inaction. Since the existing institutional setting can be seen as a reflection of embedded practices from the agricultural system, it can be concluded that the current agricultural regime causes inaction and thereby reinforces itself. Additionally, there seems to be a pattern in which stakeholders explain their inaction by ascribing it to systemic barriers rather than reflect on their own internal motivation or capabilities. It is this framing that reduces the need for individual stakeholders to perform key actions by shifting the focus from individual stakeholders' responsibility to a more abstract sense of collective responsibility in facilitating systems change.

6. Discussion

6.1 Discussion of findings

This research has shed light on some of the motivations that different stakeholders have regarding (in-)action in performing key actions. The results highlight that the 5 key issues described in the literature (Vermunt et al., 2022) still remain. It shows that, whilst things are changing, the transition towards a governance system that is conducive to nature-inclusive farming is slow as inaction persists for the majority of key actions.

Since the publishing of Runhaar et al. (2020), market dynamics have been unable to solve the key action of: rewarding businesses for activity that creates societal value, with no indication that this will change in the near future. In addition, the unfulfillment of the key action: setting enforceable and concrete goals for nature-inclusive farming, has led to a non-committal approach with limited ability to enforce stakeholders to take action. Therefore this research echoes some of the conclusions from Runhaar (2017), which state that governance arrangements for nature-inclusive farming ought to be less voluntary and that priority should be given in generously rewarding nature-inclusive farmers. LNV is most likely to be the best fitting stakeholder to take a leading role in performing these actions. They can utilize national policy as a means of creating enforceability and governmental budgets can offer additional rewards for farmers to fill the gap left by the limited market for nature-inclusive products.

In their systematic literature review on resistance to change in agri-food systems Conti, Zanello & Hall (2021), identify that agricultural systems often experience lock-ins which are caused by mutually supportive systems. Lock-ins prevent alternative practices that are positioned outside these existing systems from being integrated into the regime. Therefore lock-ins reinforce the regime to move along the existing trajectory, thus creating path-dependency. The findings from this research on the agricultural system representing the Dutch dairy sector match these generalized observations. In this context the Dutch dairy sector follows a path-dependency that favours intensive agriculture over more sustainable alternatives such as nature-inclusive farming. Here, this path-dependency is underpinned by stakeholder inaction which, in turn, is motivated predominantly by the existing institutional setting. To mitigate the effects of lock-ins and create a directional change towards sustainability, Conti, Zanello & Hall (2021) suggest that it is needed to target multiple components of the system simultaneously and that these changes are to be initiated at the same temporal scale.

Vermunt et al. (2022) pose that development of enabling conditions for nature-inclusive farming is dependent on the stakeholders who reinforce the current intensive production-focused agricultural regime. They therefore advocate for a stronger focus on intervening in current regime dynamics, or in other words, try to initiate systems change. This research shows the potential double-edged nature of such an approach. Namely, the risk that stakeholders can (strategically) utilize this framing by pointing to shared responsibilities rather than their own individual responsibilities. In turn, this can lead to a situation in which stakeholders point at, and wait on, each other, causing them to remain inactive. Whilst this research does not necessarily contrast the observation that stakeholders need to be addressed on a systems-level, it does provide a cautionary footnote for its potential to motivate inaction.

6.2 Limitations

One of the biggest limitations of this research has been the limited integration of market stakeholders. Especially supermarkets, which are positioned at the end of the supply chain, could have provided valuable insights. This, in turn, could have had implications for what topics were incorporated into the results. Supermarkets that were contacted, however, either gave no response or responded by rejecting the offer to participate in an interview. This was the case for municipalities as well. Their role in enforcing national and local policy could have provided insights into (in-)action at a more local level. The municipalities that were contacted gave lacking knowledgeability on the topic of nature-inclusive farming as a reason to not participate. But this was most likely less impactful on the results, as their role in the system (key actions relating to creating and enforcing policy as well as potentially rewarding farmers) overlapped more with other governmental actors which made up 7 out of the 13 interviews.

Another limitation has to do with the fact that interviews were built around discussing (in-)action in the context of key issues. This had the effect that conversations were implicitly framed to focus on inability rather than both ability and inability to perform key actions. The results and conclusion were therefore also primarily communicated through a lens of explaining inaction rather than action. Additionally, it should be noted that interpreting results was based on the revealed reasons for inaction. It is a possibility that some stakeholders are unaware of more nuanced internal organizational motivators or wish to conceal these.

Finally, this research was limited by some interpretive aspects. Motivations for (in-)action have been connected to various explanatory factors. However, there is some degree of interpretation when deciding which factor best suits a given case of (in-)action. In the context of inaction regarding regional development, the motivation of: “deprioritising agriculture in spatial planning due to limited land availability” was connected to the explanatory factor of physical circumstances as it pertained to limited land availability. This interpretation could prove to be contentious, however, as others could argue it to be the product of political discourse that deprioritises agriculture or point to the existing institutional setting as this shapes the functioning of spatial planning. Additionally, this research has considered only the stakeholders that were interviewed in the analysis. Interpretations of data and therefore the results could have been different in case other, or additional, stakeholders were included into the analysis. Thus the replicability of this research is limited due to interpretive aspects relating to the analysis itself as well as the selected stakeholders that were included into the analysis.

6.3 Recommendations for future research

This research found that the market has thus far been unable to sufficiently compensate farmers for their losses in revenue from extensification. Inaction here is motivated by the fact that price premiums (especially via labels) are less available to non-frontrunners and, in general, there is a limited market incentive for producing nature-inclusive products due to a low willingness to pay from consumers. As mentioned before, Conti, Zanello & Hall (2021) suggest a need for initiating multiple changes on the same temporal scale in order to break away from lock-ins. This implies a need to redirect systems underpinning multiple key issues at the same time as to fit a more sustainable trajectory.

In this context, it is recommended to research how large a yearly national budget would need to be in order to structurally compensate nature-inclusive farmers. This can be done by comparing the average yearly income of farmers for a period (of multiple years) before and after their transition. From this starting point different scenarios can be considered, such as transitioning 20, 50 or 75% of the sector towards nature-inclusive agriculture. These scenarios can consequently contribute to developing more concrete (and preferably enforceable) ambitions and targets for a national vision, stimulating action by mitigating the effects of key issue 1 (lack of a uniform and shared vision). Financially aiding farmers in a structural manner also directly targets key issue 2 (missing structural valuation for societal services) as it allows farmers to reap monetary rewards utilizing a more extensive approach to agriculture and key issue 3 (limited financial action-perspective for farmers) since it mitigates financial risks that farmers face when transitioning. Additionally, offering a financially viable perspective stimulates experimentation with nature-inclusive farming, thus creating a demand for nature-inclusive knowledge for farmers and in education, contributing to solving key issue 4 (narrow knowledge transfer). Finally, key issue 5 (resistance from the current system) is also targeted as experimentation promotes practical cultural change and financially rewarding nature-inclusive farmers frames them as part of good agricultural practice.

This research limited itself to analysing only the stakeholders that were interviewed. Identifying what actors outside the scope of this research are already doing in terms of addressing key issues can shed light on additional leverage points that can be utilized in order to activate other stakeholders. Building on this, another interesting point of departure could be on identifying the potential role for actors that are able to act more independently from the current agricultural system. The example of Urgenda's 1001ha project provides an interesting case as it assists farmers in financing herb-rich seeds and gain the necessary knowledge via the seed suppliers. This helps farmers develop a more attractive business model and leverages market dynamics as it creates a newfound demand for herb-rich seeds, stimulating competition. In the long-term this can generate supplemental agricultural systems that benefit more extensive approaches to farming. This shifts the focus away from attempting to solve inaction from the current system's established stakeholders towards more strategic activation of niche actors that are able to act more independently from the current system and its associated lock-ins.

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