

MASTER THESIS INDUSTRIAL ECOLOGY

What roots regenerative agriculture?

A value perspective on regenerative agriculture, specifically in the Zuid-Hollandse Delta

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Green manure on the field, a photo taken by the author

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What roots regenerative agriculture?

*A value perspective on regenerative agriculture, specifically in the
Zuid-Hollandse Delta*

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Executive summary

Dutch agriculture is among the most productive in the world, but this comes at high social and environmental costs. The Zuid-Hollandse (ZH) Delta, home to the largest agricultural area in the Netherlands, is both a highly fertile and vulnerable landscape: low-lying, heavily dependent on hydraulic engineering, and increasingly exposed to the pressures of climate change. The region has set itself the ambition of transitioning towards a future-proof and climate-neutral food system, and regenerative agriculture (RA) offers a promising pathway for that transition. However, RA lacks institutional recognition in Dutch policy and social research on the topic is mostly absent. This thesis addresses that gap by examining RA in the Zuid-Hollandse Delta through a moral value lens. By conceptualising regenerative agriculture as a compound moral value that has interacting sub-values, it asks the question:

How is the value landscape, including internal conflicts, of regenerative agriculture in the Zuid-Hollandse Delta constituted, and how is this landscape mediated by technological and institutional conditions?

To explore this question, I first explored what values are associated with RA in the Zuid-Hollandse Delta. A discourse analysis of practitioner and scientific texts revealed a broad and plural value landscape. Care for nature emerged as the most prominent value, alongside collective responsibility and knowledge values such as collaboration, learning, and innovation, and justice-oriented values such as intergenerational justice. Economic viability appeared as a recurring concern. Participatory observations at four farms and interviews with farmers contextualised these findings within the Zuid-Hollandse Delta. Each farm expressed the value landscape differently, shaped by scale, worldview, and business model of the farmer. Despite these differences, two values were shared across all four farms: learning, expressed differently at each site, and care for the soil, which was universally present and consistently described by farmers as the core of their regenerative practice.

The values within this broad value landscape of RA and the norms and practices they prescribe can also conflict with each other. Two major value conflicts were identified through analysis of the value landscape, supplemented with the interviews and observations at the four farms. The first concerns economic viability: within the current agricultural system, financial survival often requires high productivity, which can conflict with other RA values like care for nature, human wellbeing, and learning. This conflict suggests a structural problem in the agricultural system, requiring systemic change. The second conflict arises between intergenerational and intragenerational justice. Practices that best serve future generations, such as planting food forests, can make regenerative food less accessible to lower-income groups today. This is a normative dilemma that calls for policy instruments to help farmers and society navigate it more fairly.

The values of RA do not exist in a vacuum. Using a discourse analysis of agricultural policy documents and interviews with policymakers and a waterboard member, I examined how the institutional and hydraulic conditions of the Zuid-Hollandse Delta mediate this value landscape. At the institutional level, policy shares some values with RA, like care for nature, collaboration, and intergenerational justice, but the full plural value landscape remains unrecognised. A one-size-fits-all policy logic burdens farmers, and a structural distance between policymakers and farmers means regenerative farmers almost never shape policy directly. Moreover, the findings suggest that the economic system, built around productivity and scale, and influenced by Big Agro, is misaligned with the plural value landscape that regenerative farmers embody.

At the technological level, the hydraulic infrastructure operates according to a technofix logic and centralised control, which can conflict with autonomy and soil care, two values within the regenerative

value landscape within the ZH Delta. Most farmers did not yet experience this as a problem, but as climate change intensifies pressure on the Delta's water system, these conflicts could grow. At the same time, the waterboard and regenerative farmers share an instrumental care for the soil, yet this shared value has not been translated into shared practice: the waterboard benefits from regenerative practices without any mechanism to compensate farmers for delivering these public goods.

This research makes scholarly contributions by conceptualising RA as a compound value, enabling the analysis of value conflicts, and advancing social literature on RA within a delta context. Practically, it makes the plural value landscape of RA explicit, surfaces structural barriers, suggests a marginalised position of regenerative farmers within the agricultural power structure, and identifies possible conflicts between the hydraulic infrastructure and regenerative practice.

Five policy recommendations follow from these findings: recognise the plural value landscape anchored in soil care through a co-created working definition, recognise regenerative farmers as a marginalised group that creates broad public value, engage with value conflicts as barriers, relieve productivity pressure on farmers, and open a critical discussion on the technofix logic of the hydraulic infrastructure and its compatibility with RA (and its value landscape).

Through its findings and recommendations, this thesis takes a step towards the structural, procedural, and recognitional changes that a regenerative transition requires, which can help the Netherlands, and the Zuid-Hollandse Delta in particular, on their path towards a future-proof and climate-neutral agricultural system.

Acknowledgements

"I was dancing and whistling around the house, feeling happy about the opportunity that was granted to me to do this research and my day at the farm."

This quote comes from the autoethnographic reflections I did during this research. It captures nicely how grateful I have felt for the experience of this research. It has not always been fun, naturally, but overall it has been a very special and insightful process for me. I owe this process to many people, a few of whom I would explicitly like to thank here.

First of all, to the four farmers I have worked with: thank you so much! Your enthusiasm has been inspirational and so has your passion for your work. The week I spent at your farms has been truly eye-opening and it is an experience I will take with me for the rest of my professional life. You have also inspired me to spend more time in the garden myself, which has been a gift. This research could not have happened without your openness, honesty and willingness to participate, so thank you once more.

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Positionality Statement

Objective research does not exist. It is always influenced by the researcher's worldview and values, personal goals, experiences, and position within a society. This influence occurs at every stage of the research, from the choice of topic, to the selection of methods, to the analysis of the data, and to the conclusions that one draws. This is an unavoidable part of the research process and outcome and is not a bad thing in itself. I actually believe that allowing some personality into your research, can make it that much more powerful. However, it is important that these factors that shape one's research are made explicit, so that the reader might fully understand the research within this context. So, in this section I reflect upon my social identities and how they have shaped my research.

In this research, I have explored values within regenerative agriculture. It emerged from a personal motivation to positively contribute to a transition towards a more sustainable agricultural system. My academic career has been focused on sustainability studies: a bachelor's in Environmental Sciences in Wageningen and a master's in Industrial Ecology. I have chosen this route because I have always had a strong urge to make a positive contribution to the world we live in, including for future generations. I was raised living close to nature and have developed a deep care for it. These personal values and the beliefs that follow them may have affected this work through a confirmation bias (the tendency to search for, interpret, and favour information that confirms what you already believe or want to find). For example, I believe that agriculture can offer a way to reconnect humans and nature. At some points throughout the observations, I noticed that I actively started to search for these human-nature relationships instead of observing with a more open view. However, the use of different methods has helped me to stay critical of these biases in the research. Another example of this is that I started this research with the conviction that the term "regenerative" is inherently positive and is something worth pursuing.

In a similar line of thought, I am an empathic person with a strong sense of justice. During the fieldwork, these traits sparked a motivation in me to contribute to solving the problems I saw. This may have led me to focus on these problems, rather than my own research question.

Furthermore, I am not a farmer. I am a young Dutch woman who has been raised within a household of (semi) academics. I have no experience working at a farm, nor with working under significant pressure or owning a company. Due to this social background, I can never fully understand nor embody the values of the farmers I have been working with. I have tried to mitigate this by actively listening to the farmers and trying to make my notes as extensive as possible, to limit my own interpretation bias. In doing so, I feel like I have managed to really connect with and thereby understand the farmers I have worked with. Furthermore, actually helping at the farms made this a more embodied experience, further improving my understanding. Being from a different social background than most of the farmers may have also affected how the farmers perceived and responded to me.

Last, my background in Environmental Technology has shaped how I approach technological systems. My experience in my bachelor's programme instilled a critical perspective on the role of technology in society, and this was further deepened through a course I facilitated, in which I regularly asked critical questions about the assumptions embedded in technological systems. This critical lens (and my first supervisor) inspired me to include the hydraulic infrastructure of the Delta as an analytical dimension of this research, rather than treating it as a neutral backdrop. At the same time, I am aware that this background may have made it more difficult to approach the water management system without preconceptions. I may have been more inclined to identify tensions and critical dynamics than a researcher with a different background would have been.

A tribute to nature

Nature cannot speak, not in human language at least. However, in my opinion it should have a voice in everything we do, as it is so fundamental to all human life and holds value on its own. In this research, nature has not had an explicit voice, although it has been an important stakeholder. To make its interests and beauty a bit more salient throughout my research, I have included pictures of dried flowers from the different farms I visited in each chapter and here. They function as a way to remind the reader at the start of each chapter whose voice has not been included in this story.

Furthermore, to place the soil at the heart of this tribute, the background of this page is a photograph of soil taken during the fieldwork, with the explicit consent of the farmer. It was taken while one of the farmers was enthusiastically telling me about his soil, and how it had improved under his care. In that moment, he showed me that the soil, so often overlooked, is worth paying attention to. To me, this photograph represents the heart of regenerative agriculture: the soil beneath our feet, and all the quiet richness it holds.

This same richness is captured in the poem *Under Ground* by James Reeves. It is a short and playful reflection on the world beneath our feet and captures the quiet and unseen life held within the soil. I would have loved to include it here in full, but copyright restrictions do not allow me to reproduce it. I therefore encourage you to seek it out and read it yourself.



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List of Abbreviations

Abbreviation	Meaning
BMA	Biodiversiteitsmonitor Akkerbouw (Biodiversity Monitor Arable Farming)
CAP	Common Agricultural Policy (Gemeenschappelijk Landbouwbeleid, GLB)
EAFRD	European Agricultural Fund for Rural Development (Europees Landbouwfonds voor Plattelandsontwikkeling, ELFPO)
ELFPO	Europees Landbouwfonds voor Plattelandsontwikkeling (European Agricultural Fund for Rural Development, EAFRD)
EU	European Union
GLB	Gemeenschappelijk Landbouwbeleid (Common Agricultural Policy, CAP)
IE	Industrial Ecology
LLM	Large Language Model
LTO	Land- en Tuinbouworganisatie (Dutch Agriculture and Horticulture Organisation)
LNVN	Landbouw, Visserij, Voedselzekerheid en Natuur (Agriculture, Fisheries, Food Security and Nature)
NPL	Nationaal Programma Landbouwbodems (National Programme Agricultural Soils)
POP3	Plattelandsontwikkelingsprogramma (Rural Development Programme)
RA	Regenerative Agriculture
RVO	Rijksdienst voor Ondernemend Nederland (Netherlands Enterprise Agency)
RWS	Rijkswaterstaat (Directorate-General for Public Works and Water Management)
STES	Socio-Technical-Ecological System
WoS	Web of Science
WUR	Wageningen University & Research
ZH	Zuid-Hollandse (South Holland)

Glossary

Term	Meaning ¹
Big Agro	Large-scale industrial actors in the agricultural sector, including retailers, processors, agrochemical companies, and banks, who hold significant power within the food supply chain.
Compound value	A value that consists of a cluster of multiple interacting sub-values.
Discourse analysis	A method that studies language as social practice, examining how texts reflect and construct the values, worldviews, and power structures of their authors.
Institutional conditions/-context	The formal and informal arrangements, including policies, regulations, governance structures, subsidy systems, and economic and market conditions that determine the conditions within which farmers operate.
Mediation of the value landscape	The process through which institutional and technological contexts shape, constrain, or enable the expression of values within the value landscape of regenerative agriculture, through both their embedded values and their governance structures and practices.
Moral value	A goal or state of affairs considered worth achieving not just for oneself but on broader normative grounds (van de Poel, 2017), important for ethical reasons independent of whether widely held or acted upon.
Norm	A prescriptive rule that bridges values and practices, specifying what one ought to do or avoid in order to realise a value.
Practice	A concrete action or behaviour that follows from a norm in order to realise a value.
Regenerative agriculture	A farming approach that aims for the continuous renewal of agricultural systems, from soil through to people (Gordon et al., 2022).
STES	A complex system in which social, technological, and ecological processes are deeply intertwined and shape each other (van Buuren et al., 2012).
Technological conditions/-context	The regional water management infrastructure governed by the waterboard, including water level management, drainage, irrigation supply, and flood protection.
Technofix logic	The assumption that complex socio-ecological challenges can be solved through engineering and technical optimisation alone.
Value conflict	A situation in which two or more values prescribe incompatible courses of action, making it impossible to pursue both simultaneously.
Value landscape of RA	The full set of moral values underpinning regenerative agriculture, conceptualised as a compound value with interacting sub-values that can conflict internally. It is shaped by the context in which regenerative agriculture is practised, including institutional and technological conditions.
Value tree / framework / hierarchy	A structured representation of values, organising them into layers of values, sub-values, norms, and practices.

¹The meaning explains what is meant by the term in this research, which does not mean that this is a general definition.

1 | Introduction



Where rivers end in the sea, some of the most fertile and most vulnerable landscapes take shape. The Zuid-Hollandse (ZH) Delta, situated within the ZuidWestelijke Delta on the western coast of the Netherlands, is an example of such a landscape, and forms the geographical context of this research, see Figure 1.1.



Figure 1.1: A map of the Zuid-Hollandse Delta (Zuid-Holland, n.d.).

Deltas are fertile and resource-rich areas. They are therefore popular among inhabitants and have high societal value, yet they are inherently vulnerable to climate change impacts such as sea-level rise and salinisation (van Buuren et al., 2012). This duality can lead to a strong reliance on technological interventions in a delta area (Van Staveren & Van Tatenhove, 2016).

The Dutch ZH Delta region exemplifies this complexity. It is a diverse landscape, containing water, coast, agricultural areas and dunes (Regio Zuid-Hollandse Delta, n.d.). This low-lying landscape, shaped by the Rhine, Meuse, and Schelde rivers, in interaction with the North Sea, depends on extensive hydraulic infrastructure to support residency and agriculture (Van Staveren & Van Tatenhove, 2016). So, within this geographical area, ecological, social, and technological processes are deeply intertwined: people live and work here, ecological processes are working, and water management infrastructure keeps the landscape habitable. The region therefore functions as a complex socio-technical-ecological system (STES), in which governance, ecology, society, and technology are closely interwoven (van Buuren et al., 2012).

Within this setting lies the largest agricultural area in the Netherlands (Secretariaat Zuidwestelijke Delta, 2025). Dutch agriculture can be classified as industrial productivist: highly intensive and expansionist, globalised, and reliant on fossil fuels, agrochemicals, and multinational supply chains (Gordon et al., 2022). This model has enabled the Netherlands to become the world's second-largest exporter of agricultural products (Bos et al., 2013), but it also generates environmental and social impacts.

In the Netherlands, agriculture occupies 54% of land (CBS, 2020), produces 15% of greenhouse gas emissions (CBS, 2022), and is responsible for 56% of nitrogen deposition (CBS, 2024). Farmers themselves often face high workloads and long working hours, contributing to mental and physical

health problems (Anton et al., 2025). Examples are: 14% of Dutch farmers experience severe mental health issues (Nieuwe Oogst, 2024), the blood of Dutch farmers contains disproportionately high concentrations of pesticides, and household dust on farms has been found to contain as many as 144 different types of agricultural chemicals (Schuttenhelm, 2023).

The Zuidwestelijke Delta has the ambition to become an international frontrunner in the use of innovative technologies and practices for a healthy, future-oriented, circular agri-food sector by 2030 (Koninkrijksrelaties, 2022). Realising this ambition calls for a fundamental transformation of the agricultural system in the Delta towards a system designed around the wellbeing of both nature and people rather than profit maximisation. Regenerative agriculture (RA) offers an approach to such a transformation (Newton et al., 2020). It is a farming practice that seeks to restore farm ecology and transform the food system through changes in both practices and underlying mindsets (Gordon et al., 2025). It has recently gained renewed public and political attention due to its potential socio-ecological impacts (Soloviev & Landua, 2016). For example, it can enhance soil health and ecosystem resilience while also supporting biodiversity conservation and strengthening local food systems and farmer livelihoods (Sher et al., 2024). This emerging practice also offers a potential strategy for meeting Dutch climate action goals. The central goal of the Dutch Climate Agreement (Klimaatakkoord) is a 49% reduction in national greenhouse gas emissions by 2030 relative to 1990 levels (Rijksoverheid, 2019). This too requires substantial changes within the agricultural sector (Ministerie van Landbouw, Visserij, Voedselzekerheid en Natuur, 2025). The Nationaal Programma Landbouwbodems (National Programme Agricultural Soils) has set the target that by 2030 all agricultural soils in the Netherlands are managed sustainably (Ministerie van Landbouw, Visserij, Voedselzekerheid en Natuur, 2025). Regenerative agriculture, with its goal to restore soil health, aligns closely with these ambitions.

Despite this clear relevance to national and local climate and food system goals, regenerative agriculture currently lacks institutional recognition within Dutch agricultural policy. RA remains a loosely defined concept with no universally accepted understanding, and existing research has focused predominantly on its ecological dimensions (Schreefel et al., 2020). Research on the social dimensions of RA is largely absent. Without a stronger social research base, it is difficult to construct a meaningful and just policy category for RA, even if policymakers wished to do so. And without policy recognition, the conditions that would enable a regenerative transition will remain largely absent for the farmers who are already practising it and future regenerative farmers.

Building such a foundation entails understanding what regenerative agriculture actually means to the people who practice it: what values are central, what trade-offs they navigate, and what barriers they face. Without this, any attempt to define or support RA in policy risks imposing an understanding that flattens the movement, excludes practitioners, or fails to address the obstacles they encounter.

This need is particularly pressing in the Zuid-Hollandse Delta context of this research. Due to the vulnerability of Delta regions under climate change (Eslami et al., 2025), understanding how a regenerative transition could take shape there is even more relevant. Furthermore, the highly engineered water system of the Delta introduces a further complex dimension: any transition in farming practice in this region is inseparable from the hydraulic infrastructure that governs water and soil conditions. Yet, social research on regenerative agriculture within Delta contexts, and in particular on how the water system shapes what is possible for regenerative farmers, is entirely absent.

This research addresses these gaps by examining regenerative agriculture in the Zuid-Hollandse Delta through a moral value lens. In this study, a value is understood as a goal or a state-of-affair which is worth achieving, not just for oneself but on a higher notion (in general) (van de Poel, 2017). A value lens is well-suited to this topic and context for several reasons. First, it enables an analysis that goes beyond describing practices or outcomes and instead provides normative insight into what regenerative agriculture is and ought to be. Second, agriculture is a sector in which the values, worldview, and beliefs of an individual farmer have a significant influence on the direction and practices of a farm (Wojtynia et al., 2023). These individual value orientations can function as drivers

of, or barriers to, change within food systems (Wojtynia et al., 2023), making them an important object of study. Third, this lens allows for an novel analysis by conceptualising RA as a compound value and analysing the value conflicts emerging from this. A compound value can be understood as a cluster of multiple interacting moral values that can conflict with one another (van de Poel, 2017). Value conflicts occur when two or more values point toward incompatible courses of action within a socio-technical system (Melnik et al., 2023). Fourth, values are embedded in and shaped by social, institutional, and technological contexts (Melnik et al., 2023). A value lens is therefore well-suited to the study of complex socio-technical-ecological systems, such as the Zuid-Hollandse Delta, as it can make the values embedded in all three dimensions visible.

Currently, there is no comprehensive understanding of the value landscape of regenerative agriculture¹ in the Zuid-Hollandse Delta. This research is therefore guided by the following research question:

How is the value landscape, including internal conflicts, of regenerative agriculture, and specifically in the Zuid-Hollandse Delta, constituted, and how is this landscape mediated by technological and institutional conditions?

To address this question, the following sub-questions were identified:

- SQ1: *What values can be associated with regenerative agriculture, and specifically in the Zuid-Hollandse Delta?*
- SQ2: *How do values associated with regenerative agriculture in the Zuid-Hollandse Delta conflict internally?*
- SQ3: *How do the institutional and technological conditions in the Zuid-Hollandse Delta mediate the value landscape of regenerative agriculture?*

These questions are addressed through a mixed-methods approach combining a stakeholder analysis, discourse analysis, participant observations at four regenerative farms, interviews with farmers, a volunteer and policymakers, and autoethnographic reflections. This methodological diversity allowed me to uncover the complex value landscape of RA, which was not accessible through any single method, but emerges from the intersection of what people write, what they say, and what they do and what is experienced. Through this diverse set of methods, this research contributes to four concrete aims: (1) to map the plurality of values associated with regenerative agriculture and specifically in the Zuid-Hollandse Delta, by creating a value framework (2) identify value conflicts that arise within regenerative agriculture in the Zuid-Hollandse Delta (3) understand how the institutional and technological context of the Zuid-Hollandse Delta mediate the value landscape and (4) to translate these findings into recommendations for policymakers to support a meaningful and just regenerative transition. Overall, this research makes the complexity of RA within this context visible: its plurality, its internal conflicts, and the structural conditions that shape which values can be expressed and which are suppressed.

This research is relevant in several respects. As explained earlier, achieving a future-proof, and climate-neutral agricultural system in the Netherlands and specifically within the Zuid-Hollandse Delta requires a transition, and regenerative agriculture offers a promising option within that transition. Such a transition is driven by what people value. Making the moral values underlying regenerative agriculture explicit is therefore relevant to this transition, as it surfaces what RA aims to contribute beyond what is captured by ecological or financial indicators, and provides insights into the obstacles such a transition faces. So, this research informs policymakers seeking to support this transition by making this value landscape and its conflicts visible, and by revealing where existing institutional and hydraulic conditions inhibit or support the development of RA.

Furthermore, it provides regenerative farmers with a framework for articulating and communicating the normative depth of their practice, and for understanding the trade-offs they navigate.

¹Defined in this research as: The full set of moral values that underpin regenerative agriculture, conceptualised as a compound value with interacting sub-values that can conflict internally

Scientifically, this work advances knowledge by addressing the two research gaps previously explained and by contributing methodologically and conceptually to the study of values. From an Industrial Ecology (IE) perspective, it advances knowledge by taking a systems approach that examines the interactions between social, ecological, economic, and technological dimensions of an agricultural transition.

Note: The scope of this research

Three scoping choices must be made explicit. First, while parts of this thesis address regenerative agriculture more generally, the empirical findings concerning the Zuid-Hollandse Delta refer to arable farming only. All four farms visited were arable farms, and dairy farming, although it is a significant percentage of Dutch agriculture, falls outside the scope of the empirical analysis. Second, in this research the institutional conditions refer to the formal and informal arrangements, including policies, regulations, governance structures, subsidy systems, and the economic and market conditions that together determine the conditions within which farmers operate. Third, throughout this study, the technological conditions refer to the hydraulic system of the Delta. This is the regional water management infrastructure governed by the waterboard, including water level management, drainage, irrigation supply, and flood protection.

2 | Literature review



In this chapter, I discuss literature on regenerative agriculture and its limitations, review relevant literature on values in (regenerative) agriculture, and, based on this, identify the research gap this study addresses.

2.1 Regeneration as a transformative paradigm

To understand regenerative agriculture, one must first understand the broader concept of regeneration. One approach to achieve change within our society is to aim for regenerative practise, dynamics and systems (Buckton et al., 2023). In order for a social-ecological system to be called regenerative, it must maintain positive reinforcing cycles of wellbeing within and beyond themselves, with a special focus on the interrelations between humans and nature (Buckton et al., 2023). The approach goes beyond sustainability (maintaining what is) in the depth of change it promotes: restoring what was lost and improving what is there (Gordon et al., 2022) ¹.

2.2 Regenerative agriculture: meanings and limitations

This concept of regeneration can be applied across multiple socio-ecological scales, including business, economics, and agriculture. A very broad definition of regenerative agriculture is that it aims for the continuous renewal of agricultural systems, from soil through to people (Gordon et al., 2022).

RA is increasingly gaining traction across various contexts and sectors, partly because of its appealing name with which a positive narrative can immediately be associated (Tittonell et al., 2022). Despite its growing popularity, regenerative agriculture lacks a universally accepted definition, resulting in fragmented and sometimes conflicting interpretations of what the concept entails (Newton et al., 2020; Schreefel et al., 2022). Moreover, the boundaries between RA and other agricultural approaches, such as agroecology, are sometimes fuzzy (Tittonell et al., 2022). This conceptual ambiguity and the lack of protection of the term can lead to diverse interpretations of the term RA depending on the interest of the party that applies it (Tittonell et al., 2022). This poses a risk of abuse of the term for greenwashing purposes, which is a criticism of the movement (Tittonell et al., 2022).

Context: The history of regenerative agriculture

Regenerative agriculture as a named concept emerged in North America before spreading to Europe, Latin America, Australia, and beyond (Tittonell et al., 2022), yet its underlying principles, including reciprocal relationships with the land, soil restoration, and biodiversity through polyculture, are rooted in Indigenous knowledge systems that have been practised around the world for millennia (Marta Fiolhais, 2023).

¹Buckton et al. (2023) have identified three outcomes of a regenerative system. First, such a system would optimise the biosphere's self-maintaining and self-renewing functions, supporting its capacity to adapt and evolve without loss of ecological integrity. Second, a regenerative system would consider human wellbeing holistically, ensuring that people's full range of needs are fulfilled while enabling cultural and intellectual development. Lastly, a regenerative system promotes a mutually reinforcing dynamic between ecological and human regeneration (internal regeneration) and the regeneration of the broader socio-ecological context in which it is embedded (external regeneration).

Existing literature reveals a clear divide in how regenerative agriculture is described. Some definitions emphasise specific farming practices, while others focus on the outcomes these practices are intended to produce (Newton et al., 2020). Across both approaches, there is a strong emphasis on ecological outcomes, such as soil health, nutrient cycling, water quality, and climate change mitigation (Schreefel et al., 2020).

Context: The principles of regeneration

There is no single accepted set of principles that belongs to regeneration. The overview below offers a peek into what the principles could entail, which is proposed by Rodale Institute (2019). It covers regeneration in general and provides specific examples of how this is applied in agriculture.

1. **Diversity.** Increase the diversity in plant species, business, people, culture, personal experiences, capacities, opportunities and openness to new experiences.
2. **Protection.** Stronger soil cover and microbial life, a more stable local economy, and greater personal capacity to weather hardship.
3. **Purity.** End chemical inputs, healthier communities, and the replacement of harmful habits with beneficial ones.
4. **Permanence.** Deep-rooted perennial growth, businesses that reinvest in their community, and personal practices that bring lasting meaning.
5. **Peace.** Weed and pest pressures on growing systems are disrupted, safer communities, and a shift from hostility towards tolerance.
6. **Potential.** Nutrients become more available to plants, resources more widely shared within communities, and personal strengths more accessible to others.
7. **Progress.** Healthier soil structure, stronger communities, and greater wellbeing.

2.3 Social research on RA

While these ecological dimensions are important to regenerative agriculture, the social dimension of RA is less explored. However, some new research is emerging. A lot of this work is focused on human-environment relationships within RA and the relational or mindset shifts that regenerative practice can necessitate or bring forward. For example, Seymour and Connelly (2023) applied a more-than-human ethic of care to RA in New Zealand, arguing that relational approaches reveal shifts in farmers' socio-ecological thinking and that such shifts are important to the transformational potential of the movement. Within a Dutch context, Leitheiser et al. (2022) examined small-scale farmers through the concept of proto-regenerative imaginaries, showing how farmers driven by a desire to contribute to social and ecological wellbeing create spaces for alternative food practices through de-commodification, reciprocal networks, and cooperative resource pooling.

Research that bridges this type of work and value research within RA literature, as presented in the next section, comes from Wojtynia et al. (2023). They introduce a spheres of transformation framework that identifies the personal (values and worldviews), the political (institutions), and the practical (everyday outcomes) as interacting dimensions of farmer transformation in the Netherlands.

2.3.1 Value in regenerative agricultural literature

Before introducing the full value lens applied in this research (Chapter 3), it is worth examining what existing literature has to say about values in regenerative agriculture.

In agricultural literature (beyond only RA), discussions of value have focused predominantly on value-added agriculture, so looking at value from an economic perspective (Sadovska et al., 2020).² Research explicitly linking moral values to regenerative agriculture is scarce.

²There is growing recognition that value extends beyond economic metrics, like the triple bottom line framework and the value creation framework proposed by Sadovska et al. (2020).

An exception is the work of Gordon et al. (2025), who analysed relational values (RVs) within RA literature. They argue that current literature often uses a productivist framing of RA that focuses on instrumental values. They propose a more relational framing of RA, in which RVs are more central, and the plurality of values is more accepted, which emphasises the restoration of reciprocal relationships between humans and between humans and nature. A further exception is the work of Pape et al. (2025), who used semi-structured interviews with regenerative ranchers in the United States to map how they value their practices.

2.4 Regenerative agriculture within a delta context

Agricultural systems are inherently dependent on technology, not only through the tools and techniques used by farmers, but also through the broader infrastructural and environmental management systems in which farming is embedded. As mentioned in the introduction (Chapter 1), this is especially true for the Dutch Delta region, which depends on extensive hydraulic infrastructure to keep the landscape habitable and farmable (Van Staveren & Van Tatenhove, 2016). Despite this dependency, research examining how regenerative agriculture interacts with the water management systems that underpin farming in delta contexts is absent.

An example of research that does study RA within a delta context comes from Kersey et al. (2024). They studied how stewardship programmes in river delta soils of southwestern British Columbia (Canada) contribute to RA outcomes (improved soil water regulation, soil carbon capturing, and soil organic carbon storage). This study again emphasises environmental performance, but the interactions between RA and the technological water system within the delta environment are not explored.

2.5 Research gap

From this literature review, a two-fold research gap emerges.

The first concerns the social dimensions of regenerative agriculture. Most of RA literature focuses on ecological dimensions such as soil health, nutrient cycling, and climate mitigation (Newton et al., 2020; Schreefel et al., 2020). Where social research has emerged, it has primarily examined human-environment relationships and mindset shifts, as in the work of Seymour and Connelly (2023) and Leitheiser et al. (2022), or has approached transformation through frameworks such as the spheres of transformation developed by Wojtynia et al. (2023). Within agricultural literature more broadly, discussions of value remain largely economic (Sadovska et al., 2020). Research on moral values within regenerative agriculture is scarce, despite the fact that values are an important driver of farmer behaviour and practice.

The second gap concerns the interaction between regenerative agriculture and the highly engineered water management systems of delta contexts. Existing research situated in delta environments, such as the work of Kersey et al. (2024), does not treat the delta as a relevant and influential context. No research has examined how regenerative agriculture interacts with the water management context of a delta, despite the fact that this system shapes two of the most fundamental resources for agriculture in the region: water availability and soil conditions.

This research addresses both gaps by exploring the moral value landscape of regenerative agriculture in the Zuid-Hollandse Delta and examining how it is mediated by the institutional and hydraulic conditions of the region.

3 | Theoretical lens: moral values



To address the previously identified research gap (Section 2.5), I examine RA through a moral value lens, which is introduced here. Because this research is an ethically informed analysis, it is necessary to explicitly define and justify the normative concepts and the analytical lens applied. I first introduce the concept of moral values, then introduce value relationality. I end by operationalising the terminology used in this work: explaining how the theory is applied in this research.

3.1 Introducing values

‘Value’ is a very broad and ambiguous term, which can have many meanings, depending on the context in which it is applied. For example, in agricultural literature, value is often mentioned in relation to business (models), as became clear in the literature review (Chapter 2). Moreover, different social disciplines define value differently.¹ This research follows the description of a value by van de Poel (2017), who defines that a value expresses a goal or a state-of-affair which is worth achieving, not just for oneself but on a higher notion (in general). The remainder of this section presents some important theories and features of values that this research applies.

3.1.1 Values in context

Values can be studied at (at least) three levels: individual, group and societal levels, and they are embedded in, and mediated by, social, institutional, and technological contexts (Melnik et al., 2023). This study focuses on this mediation by institutional and technological contexts. At the institutional level, values are embedded in institutional arrangements, such as policies, regulations, and governance structures, which also shape how values are prioritised and enacted in practice. At the technological level, it is widely accepted that technologies mediate (undermine or promote) certain values when they are used (Klenk, 2021). Taking it one step further, a technology embodies the value it was designed to contribute to. However, whether the intended value is realised depends on the design, use and context of the technology (Kroes & van de Poel, 2014).² In this research, the governance of a technology is understood as part of its technological context: the rules, decisions, and institutional arrangements that determine how a technology is managed are treated as equally capable of mediating values as the technology itself.

¹Psychology views values as abstract, motivational goals that guide behaviour across situations, distinct from attitudes or traits, and shaped by cultural, social, and individual factors. They are not fixed, but adapt over time in response to changing social and economic conditions (Steinert, 2023). Sociology views values as abstract goals that guide social action and link individual motivations to collective value systems, recognising them as dynamic and shaped by social context (Steinert, 2023). Anthropology understands value as culturally embedded and actively produced through social practice. It examines how different societies define what matters, how values are structured or hierarchical, and how people create and reproduce value through action, though a full theory of value change is still developing (Steinert, 2023). Philosophy studies value by asking what it is, how it should be understood, and whether it is objective or subjective. It focuses on defining different kinds of value, how we judge what is good or right, and how values may change or conflict (Steinert, 2023).

²The interactions between humans and technologies are not singular, rather they are reciprocal: humans shape the technologies they design and use, while those technologies also shape human experience and our societies (Friedman et al., 2017).

3.1.2 Moral values: values considered important for normative reasons

I look at moral values in RA rather than societal values. Societal values refer to the values that are widely held or prioritised by members of a society. They reflect what people collectively consider important in practice, such as economic growth, or food affordability (Kroes & van de Poel, 2014). Moral values, in contrast, refer to values that are considered important for normative or ethical reasons, independent of whether they are widely held or acted upon in society, for example, justice (Kroes & van de Poel, 2014).³ Moral values are particularly relevant in this research because they provide a normative orientation: they articulate not only how agricultural systems currently function, but how they ought to function. In this research, moral value creation refers to the process through which regenerative farming practices bring moral values into being, strengthen them, or make them more salient in the decisions and experiences of farmers and the communities around them.⁴

Furthermore, moral values can be understood as nouns (e.g. justice) or verbs describing a valuing activity (Melnik et al., 2023). Valuing is the active process of rating, appreciating, or being drawn towards or away from something. When something is valued, it does not necessarily mean that the thing in question is objectively valuable. This is the distinction between, for example, the admired and admirable (Steinert, 2023).

3.1.3 The value of nature

Moral values in non-human beings and natural systems can be expressed and realised in practice in different ways: there are different reasons why nature matters. To account for this plurality of values⁵, I will make a distinction between intrinsic, instrumental, and relational values. Intrinsic values refer to the worth of an entity in and of itself, independent of its usefulness to humans. These values are not contingent on human judgements, but instead other-than-human beings are morally significant in their own right (Himes et al., 2024). Instrumental values describe the importance of other-than-human beings as functioning as means to achieve human ends (goals, preferences or needs). The value is derived from its utility to humans (Himes et al., 2024). Relational values concern the meaningful, often reciprocal relationships that humans have with nature and with one another through nature. This extends beyond a means to an end and emphasises connections to specific places, landscapes, species, or ecosystems, as well as social relationships that are shaped and sustained through interactions with the natural environment (Himes et al., 2024).

3.2 Value relationality

Moral values should not be treated as isolated entities, but rather as relational (value relationality). This means that they are linked to the environment and to other values and beliefs (Steinert, 2023). So, they are embedded in a network of other values, which means these other values can affect them: they can co-exist, interact, overlap, reinforce or conflict. These interrelations create value dynamics which are specific to the socio-technical system in which the values exist (Melnik et al., 2023).

This study draws upon two important concepts related to value relationality, compound values and value conflicts, which are introduced below.

³Moral values can influence societal values, but societal values do not necessarily reflect moral values (Kroes & van de Poel, 2014).

⁴As Meadows (2021) highlights, values can be measured because they are considered important, but measurement can also shape what is valued. Some values, such as financial value, can be quantified, while others, such as stewardship, or sense of place, are experienced qualitatively. Although these qualitative values are no less important, they are often overlooked because they are difficult to measure. This research, therefore, adopts a broad understanding of value creation that recognises both measurable and non-measurable moral values.

⁵Philosophical discussions on value pluralism are relevant, yet these debates fall outside the scope of this thesis, which adopts a pragmatic and empirically oriented approach to value plurality.

3.2.1 Compound values

Values can consist of other values, which means this value is a compound value: a cluster of multiple interacting moral values. Van de Poel (2017) characterises sustainability as a compound value, consisting of the values care for nature, intergenerational justice and intragenerational justice. This work extends this idea by capturing regenerative agriculture as a compound value, as it cannot be described by merely one value. This means this practice is looked at as if it has several interacting sub-values.

3.2.2 Value conflicts

Characterising RA as a compound value enables the study of value conflicts, which is a focus of this study. Two or more values are in conflict in a situation when, taken separately, they each endorse a different course of action as the most desirable (Melnik et al., 2023).⁶ There are many examples of value conflicts, like accountability vs privacy, trust vs safety, and control vs autonomy (Friedman et al., 2017). Understanding value conflicts is relevant because such conflicts can hinder development and decision-making. When values point toward incompatible courses of action, they can create uncertainty or stalemate in practice and (policy) design (van de Poel, 2017). Making such conflicts explicit is therefore needed for informed prioritisation and for focused policy-making or design.

3.3 Operationalising the terminology

Having introduced the key theoretical building blocks, this section explains how these are brought together and applied in this research. Two concepts are introduced that operationalise the theory in practice: the value framework, which structures how values, norms, and practices are organised and analysed, and the value landscape, which captures the broader set of values and their interactions within the specific context of regenerative agriculture in the Zuid-Hollandse Delta.

3.3.1 Introduction to the value framework

The concepts of compound values and value conflicts come together in a value hierarchy proposed by van de Poel (2017). This hierarchy allows for the translation of values into design requirements and is structured into three main layers, each potentially containing sublayers. At the top are overarching values such as sustainability, intergenerational and intragenerational justice, and care for nature. The middle layer contains norms that guide or constrain actions. The bottom layer contains design requirements, which specify the desired features of the system being designed according to the norms and values. Figure 3.1 shows a worked-out example of this hierarchy applied to biofuels.

⁶Values can align or conflict at different levels of human experience: within an individual, among individuals, between an individual and a group, among groups, institutions, nations, and societies (Friedman et al., 2017).

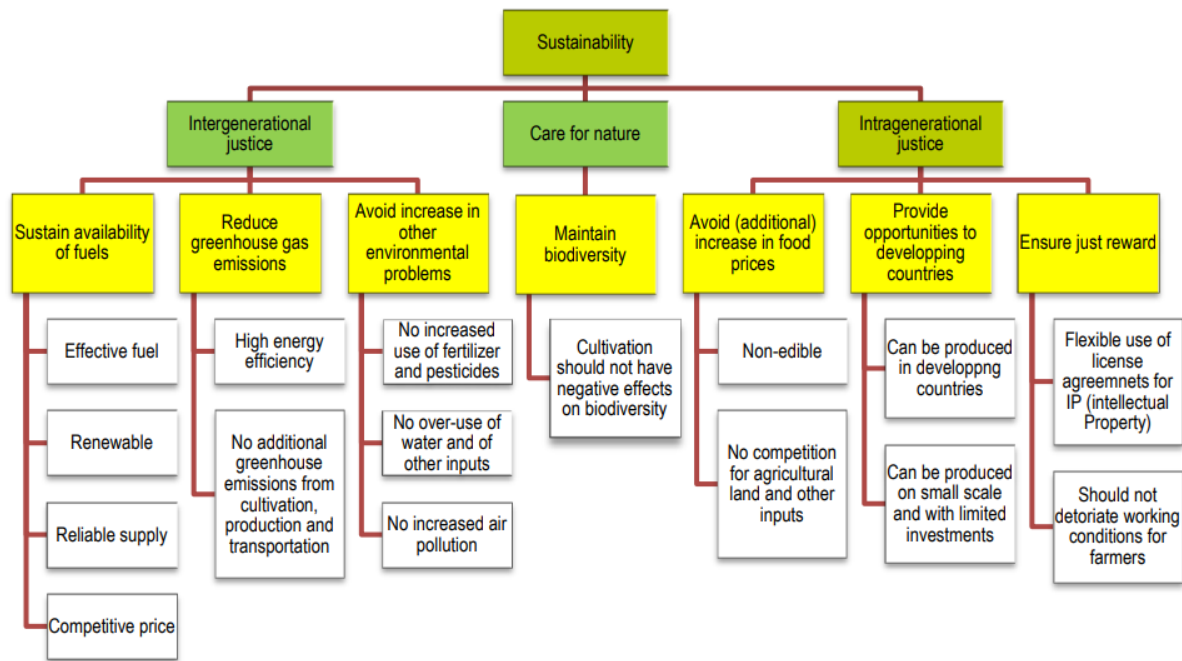


Figure 3.1: Example of a value hierarchy for biofuels. Values are green, norms yellow, and design requirements white (van de Poel, 2017).

This study adapts the value hierarchy for the analysis of RA by working with four levels: values, sub-values, norms, and practices. In this framework, regenerative agriculture is conceptualised as a compound value at the top. Each sub-value generates norms that prescribe how one ought to act, and these norms in turn translate into concrete (farming) practices. For example, the sub-value of care for nature generates the norm that soil life must be actively supported and protected. This norm prescribes the practice of avoiding tillage, so as not to disrupt the microbial networks in the soil. The process from value to practice is thus made explicit, and it is at the level of practice that conflicts between sub-values become visible.

Using the value hierarchy not merely as a structuring device but as a critical analytical lens adds depth to the analysis. Conceptualising regenerative agriculture as a compound value challenges dominant framings that reduce it to ecological performance metrics or a list of technical practices. The extended framework enables systematic analysis of how abstract regenerative values are translated into norms and practices, and where misalignments or conflicts emerge across these levels. In this work, I refer to this value hierarchy as a value framework or a value tree.

Note: Use of framework

It should be noted that the full four-level framework is not used fully throughout this research. In the empirical analysis of the value landscape (Section 6.1), the framework is used at the level of values and sub-values, mapping which values are present across farms and discourses without tracing each one to its associated norms and practices. This is because the translation of values into norms and practices varies greatly across farms and contexts, making its application neither feasible nor analytically interesting. The full depth of the hierarchy, from value through norm to practice, is only worked out fully for two examples in the two value conflicts identified in Section 6.2. There, following this hierarchy is needed for understanding where and why the conflict arises. It is therefore the conceptual idea of the hierarchy, rather than the complete framework, that runs throughout this work.

3.3.2 Value landscape

The term value landscape is used throughout this research to refer to the full set of moral values that underpin regenerative agriculture, conceptualised as a compound value with interacting sub-values that can conflict internally. However, the value landscape does not exist in isolation. As established in Section 3.1.1, values are also embedded in and mediated by institutional and technological contexts. In the context of regenerative agriculture in the Zuid-Hollandse Delta, this means that the value landscape is mediated by two contexts⁷: the institutional (policy and economic) arrangements that govern farming, and the hydraulic infrastructure on which farming depends. These contexts, and the values embedded in them, can enable values within the value landscape to be expressed in practice, constrain others by making them difficult or costly to act on, or generate value conflicts when the values embedded in the context clash with those in the RA value landscape.

Figure 3.2 provides a schematic overview of the theoretical framework of this thesis.

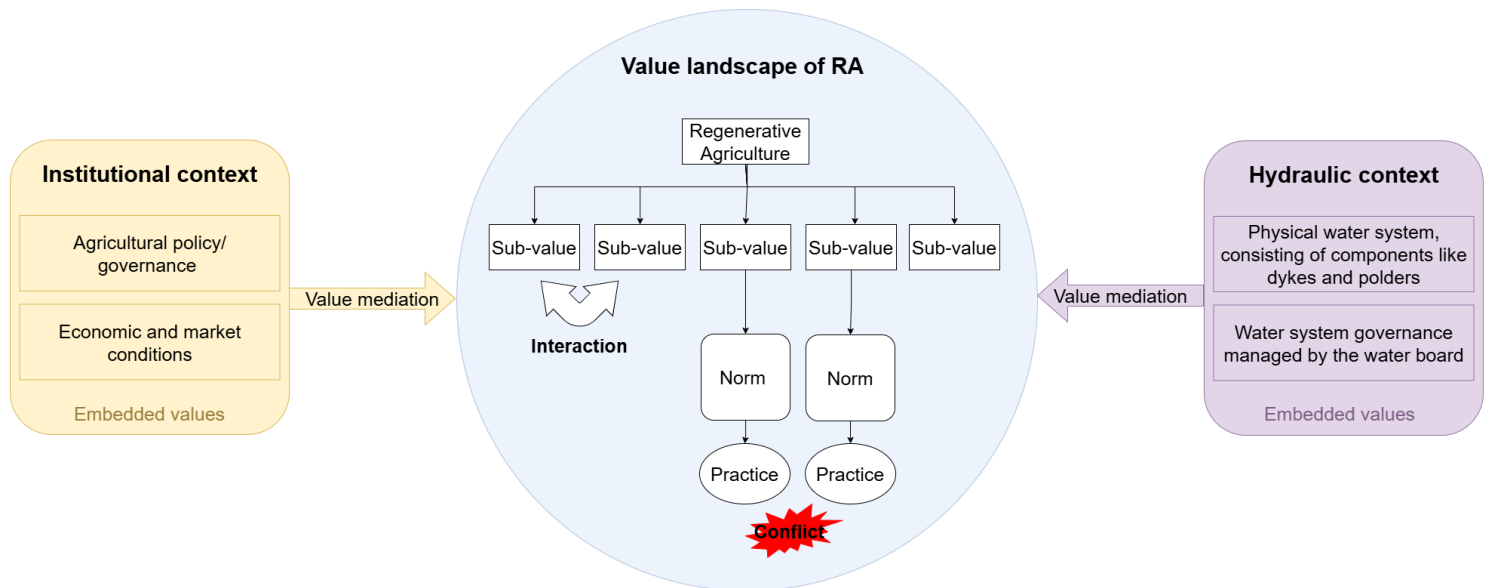


Figure 3.2: Theoretical framework: regenerative agriculture as a compound value landscape, mediated by institutional and technological (hydraulic) contexts.

⁷There could be more forces at play, but these two contexts are the focus of this study.

4 | Stakeholder analysis



In order to understand the value landscape of regenerative agriculture in the Zuid-Hollandse Delta and its interactions with the institutional and technological context, it is important to first fully understand the agri-food system of the Zuid-Hollandse Delta in which regenerative farmers operate. To do so, I performed a stakeholder analysis of the most important actors in the system and their interactions, as presented in this chapter.

4.1 Stakeholder analysis

Figure 4.1 shows an overview of all identified stakeholders who are involved in regenerative agriculture within the Zuid-Hollandse Delta in a stakeholder map. It shows the stakeholders and interactions (shown by arrows). A selection of the stakeholders that I deemed most important are introduced below. They are presented starting with the core actors directly involved in regenerative agriculture, followed by societal actors, supporting and network actors, market and financial actors, and finally the different levels of governance shaping the institutional and hydraulic context.

I do not claim this analysis is complete, more research would need to be done for that. However, it does provide a first impression of who is involved in the system of RA in the Zuid-Hollandse Delta. A more extensive introduction of all the identified stakeholders can be found in Appendix A.

4.1.1 Regenerative farmers

The most important stakeholder is the RA farmers themselves. These are the primary actors implementing regenerative agriculture practices in the ZH Delta. There is no estimation of the number of farmers practising regenerative agriculture within the ZH Delta, but it is a small pioneering community.

4.1.2 Nature

Non-human nature is also an essential stakeholder, because it provides all resources and ecosystem services necessary for practising (regenerative) agriculture. Some essential elements it offers are freshwater, (healthy) soil, and biodiversity. It also offers many other forms of value to both the farmers and the larger community living within the ZH Delta, such as aesthetic, recreational and relational value.

4.1.3 Society

Consumers

The most directly involved societal actors are food consumers, particularly those who buy regenerative products. Their willingness to pay a higher price for regenerative products gives them market power, shaping the economic conditions under which regenerative farmers can operate.

Residents

Residents of the Zuid-Hollandse Delta are also relevant stakeholders, as the physical landscape in which they live is largely shaped by agricultural land use. The region has a strong farming identity, characterised by landscapes that are historically dominated by farms. Residents can also interact

directly with regenerative farms, for instance through workshops or community spaces that some farmers organise as part of their practice.

Media

The media play an important role in shaping public perceptions of agriculture, including regenerative practices. In the Netherlands, the agricultural sector has been the subject of intense and often polarised public debate, which influences how farming practices are perceived by consumers, policymakers, and the broader public (KRO-NCRV, 2018). The media, therefore, acts as an indirect but influential force in the system.

4.1.4 Cooperatives

As RA is still an emerging practice, community formation is especially important. These cooperatives and networks can support RA farmers through knowledge exchange, joint marketing, shared learning, and collective representation. An important regional actor in this category is Rotterdam de boer op!, which is a regional initiative that aims to transform the food system around Rotterdam by strengthening the connection between agriculture, nature, and urban consumption. The initiative focuses on enabling farmers to transition towards more sustainable practices while simultaneously stimulating market demand through consumer awareness and supply chain collaboration (Rotterdam de boer op, n.d.).

4.1.5 ReGeNL

ReGeNL is a national regenerative agriculture network that supports the transition towards regenerative practices by connecting farmers, researchers, businesses and policymakers, and by facilitating pilot projects and knowledge development. It is a programme funded by the Dutch government, through the Nationaal Groenfonds (National Greenfund), and it has been initiated by the Dutch ministry LNV.

4.1.6 Knowledge institutes

Since RA is an emerging field, knowledge institutes play an important role in researching its potential and accelerating development through scientific studies. They have a signalling and advising role. Within the Netherlands Wageningen University and Research is the most important and active knowledge institute focused on RA (Wageningen University & Research, n.d.).

4.1.7 Business sector

Big Agro

'Big Agro' is a term that refers to the agro-industry, entailing a network of large multinational companies that dominate the agricultural supply chain from inputs to processing and distribution. The sector can be divided into several main groups. First, seed and crop protection companies produce genetically modified seeds, synthetic fertilisers, and pesticides. Second, commodity traders buy, process, and trade grains and other raw materials globally. Third, animal feed and meat processing giants, which are less relevant here as they are mostly part of the animal system. Finally, financial actors such as Rabobank play a role by selectively financing capital-intensive agricultural operations (Bronkhorst, 2024). Because these companies control key parts of the supply chain, including inputs, financing, and market access, they have big influence over prices, production standards, and contract terms (Bronkhorst, 2024).

Food industry apart from Big Agro

Some regenerative farmers bypass the conventional supply chain by using shorter, more localised distribution models. Rather than selling to large processors or retailers, they sell directly to consumers or through small intermediaries such as farm shops, local food initiatives, vegetable box schemes, or alternative distribution platforms.

Farmers trade and advocacy associations

Farmers' trade and advocacy associations represent the economic, social, and political interests of agricultural entrepreneurs in the Netherlands (Rijksdienst voor Ondernemend Nederland, n.d.). These organisations act as intermediaries between farmers and policymakers, lobbying for a favourable entrepreneurial climate at local, national, and European levels on themes such as the Common Agricultural Policy (CAP), nitrogen regulations, and water quality. The most prominent of these is LTO Nederland, which represents approximately 35,000 Dutch farmers and horticulturalists. Its regional branch LTO Noord is active in the province of Zuid-Holland (LTO Nederland, n.d.).

4.1.8 European Union

The European Union (EU) is responsible for the development and implementation of the Common Agricultural Policy (in Dutch: Gemeenschappelijk Landbouwbeleid, GLB). The CAP aims to support Europe's agricultural sector through income support, market measures, and rural development instruments, whereby national and regional programmes address context-specific needs (Directorate-General for Agriculture and Rural Development, 2026).

Beyond its regulatory role, the EU is also an important financial actor in agricultural transitions. Through the CAP and the European Agricultural Fund for Rural Development (EAFRD, Europees Landbouwfonds voor Plattelandsontwikkeling, ELFPO), the EU co-finances Rural Development Programmes (Plattelandsontwikkelingsprogramma, POP3). Approximately half of the total POP3 budget (around €1.6 billion between 2014 and 2020) originated from European funds. These resources are distributed through national and provincial authorities (Van Der Meulen et al., 2020).

LEADER projects

The LEADER Zuid-Hollandse Eilanden project is part of a European subsidy program aimed at strengthening rural areas through bottom-up development. It brings together local stakeholders, including residents, farmers, entrepreneurs, and governments, to support initiatives that enhance the vitality of the region. The program focuses on themes such as agricultural innovation, sustainable landscapes, and rural livability, and provides funding, guidance, and networking opportunities for local projects (LEADER, n.d.).

4.1.9 National government

Ministry of Agriculture, Fisheries, Food Security and Nature

The national government, primarily through the Ministry of Agriculture, Fisheries, Food Security and Nature (Landbouw, Visserij, Voedselzekerheid en Natuur, LNV), is responsible for developing and implementing national agricultural policy. The national government is also responsible for supervision and oversight, for example with regard to food quality and compliance with environmental standards. These policies operate within the framework of the European CAP, but are translated into national objectives, instruments, and enforcement mechanisms. The LNV is responsible for national schemes, the coordination of the CAP and the Rural Development Programme (POP3). It also contributes to financing sustainable investments through instruments such as the SME Agricultural Credit Guarantee Scheme (Borgstelling MKB-landbouwkredieten) (Van Der Meulen et al., 2020).

Rijksdienst voor Ondernemend Nederland

European agricultural financing for the Netherlands is almost always channelled through the national government, primarily through the Rijksdienst voor Ondernemend Nederland (RVO). While the European Union determines the overarching framework of the CAP, the implementation, control, and allocation of subsidies to farmers are carried out by national authorities such as the RVO (Rijksdienst voor Ondernemend Nederland, n.d.).

Rijkswaterstaat

Rijkswaterstaat (RWS) is the executive body of the Ministry of Infrastructure and Water Management, responsible for managing the Netherlands' primary water system, including water quantity, quality,

and flood protection (Ministerie van Financiën, 2018). For (regenerative) farmers, RWS is a relevant actor because it manages water levels, freshwater availability, and water quality, which directly affects the hydrological conditions on which farming depends.

4.1.10 Regional government

Provinces

Provinces, in this case Zuid-Holland, implement national policies at the regional level and develop additional region-specific policies. In the agricultural domain, this includes responsibilities for spatial planning, balancing farming with nature conservation, industry, and recreation, and overseeing environmental quality of soil, water, and air (Koninkrijksrelaties, 2012a).

They are responsible for implementing POP3 measures and managing various additional subsidies and loan schemes aimed at supporting innovation, sustainability, and farm transitions. Provinces assess subsidy applications, determine funding ceilings, and implement subsidy programmes in cooperation with the national government and other partners (Van Der Meulen et al., 2020).

Provinces form the governmental body that (regenerative) farmers are most in interaction with.

Water board Hollandse Delta

Where RWS is responsible for the maintenance of the large water systems in the Netherlands, water boards (Waterschappen) are responsible for local execution. Waterschap Hollandse Delta is responsible for ensuring sufficient and clean surface water across the South Holland islands, including Goeree-Overflakkee, Hoeksche Waard, and Voorne-Putten. Its core responsibilities include regulating water levels, maintaining water quality, managing flood protection through over 800 kilometres of dykes and dunes, and overseeing wastewater treatment (Waterschap Hollandse Delta, n.d.).

Through its management of ditches, water levels, and ecological zones, it directly shapes the hydrological and ecological conditions of the agricultural landscape (Waterschap Hollandse Delta, n.d.). Therefore, the waterboard's decisions on water management have a direct effect on what farming practices are feasible.

4.1.11 Municipalities

Municipalities are responsible for implementing national rules at the local scale and shaping local policy. In agriculture, they regulate land use through zoning and local plans, issue permits, and manage how agricultural areas interact with residential, natural and commercial zones (Koninkrijksrelaties, 2012b).

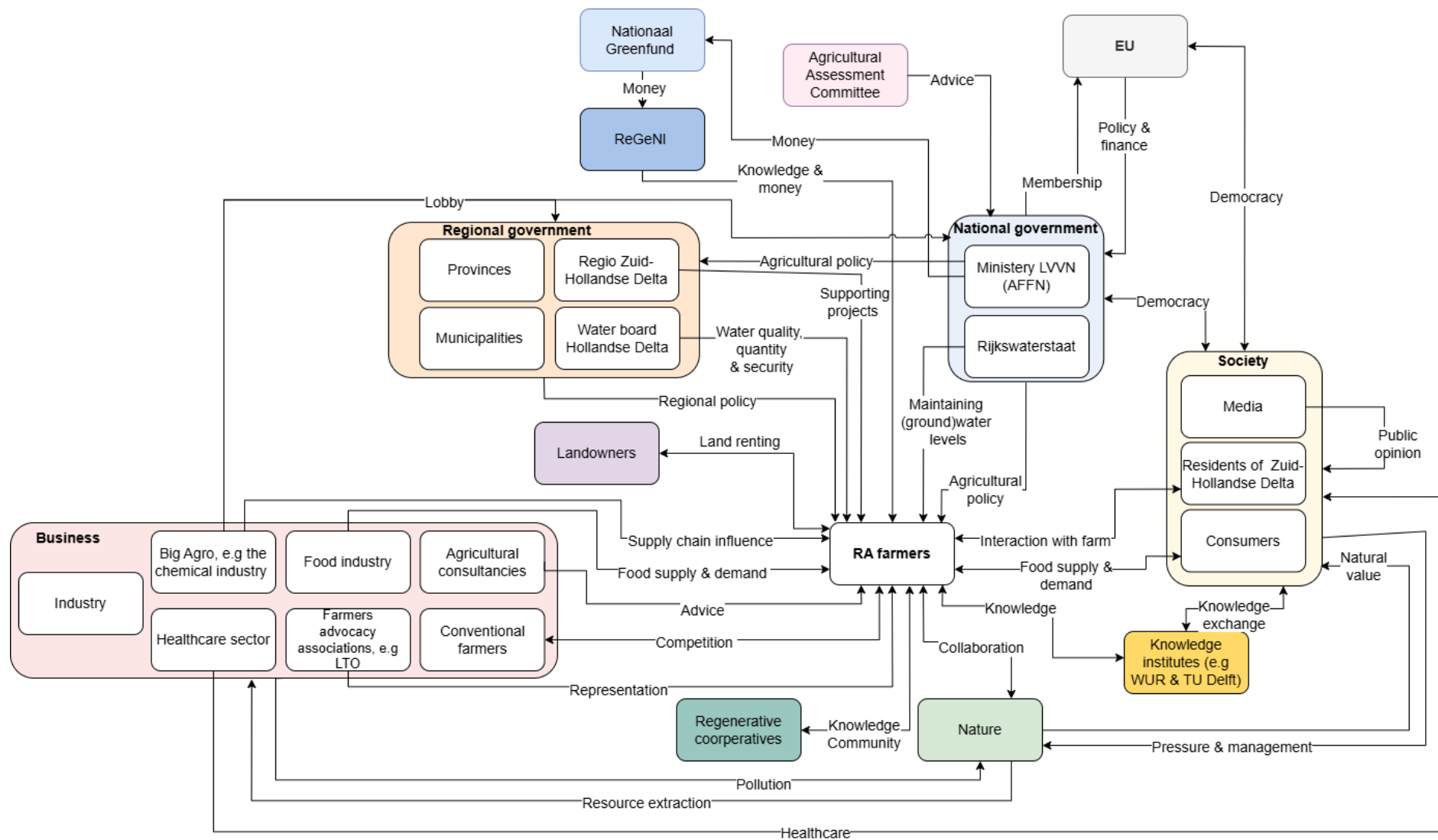


Figure 4.1: Stakeholder map of regenerative agriculture in the Zuid-Hollandse Delta. Interactions are shown with labelled arrows.

4.2 Power-Interest grid

To make the differences in power and interest among the most important actors in the system visible, the stakeholders have been mapped in a power-interest grid, as presented in Figure 4.2. This provides a simplified representation of how different actors relate to regenerative agriculture in the Zuid-Hollandse Delta food system, from the perspective of a regenerative farmer. In this context, power refers to the degree of influence a stakeholder has over a transition towards regenerative agriculture in the Zuid-Hollandse Delta food system, for example through control over food prices, production standards, and market access. Interest refers to the extent to which a stakeholder is engaged in or affected by that transition.

The mapping reflects my own interpretation as I have gained throughout this research (for example in interviews, literature, informal conversations with farmers and in the field) and does not claim to be complete or definitive. An important note is that the relative distances between actors in the figure indicate my view of their general positions rather than precise measurements. The rest of this section explains how each stakeholder was positioned.

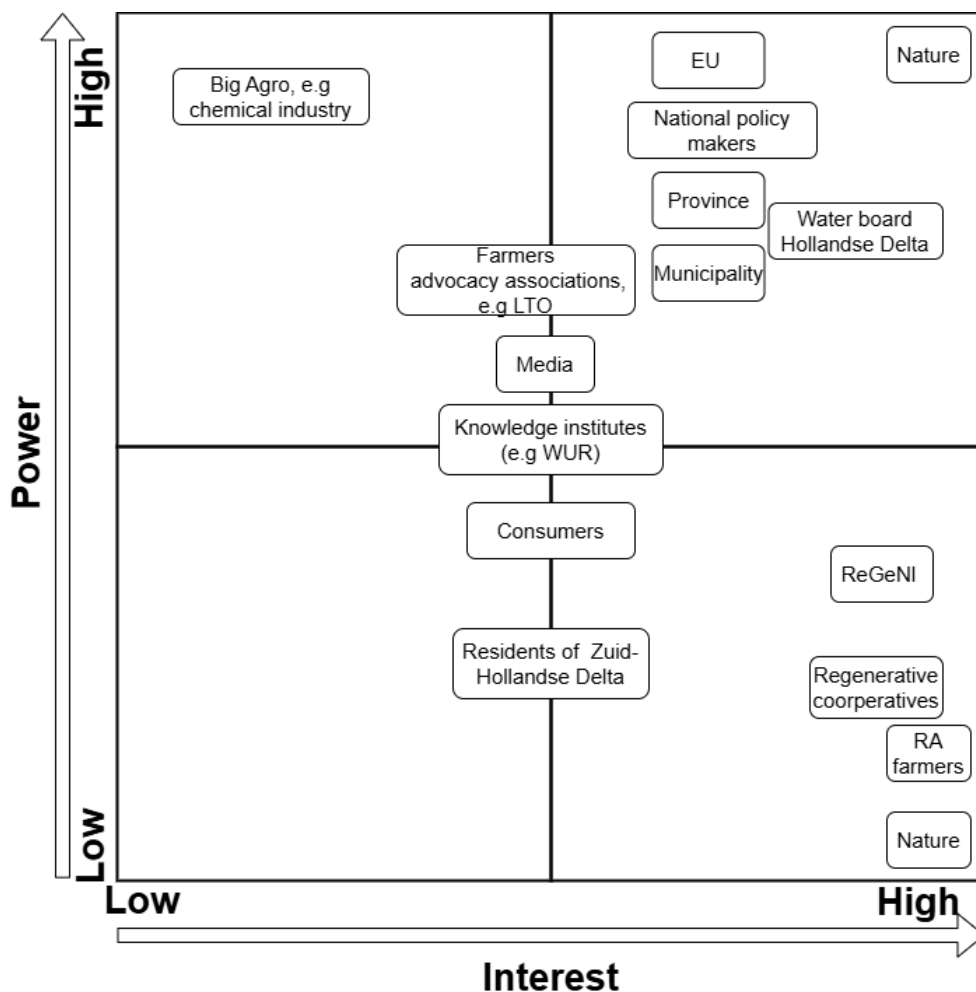


Figure 4.2: Power-interest grid, a simplified representation of how different stakeholders relate to regenerative agriculture in the Zuid-Hollandse Delta food system.

Regenerative farmers are placed at the position of highest interest and lowest power. As actors at the end of the supply chain, they are very dependent on subsidies, market conditions, and the willingness of other actors to support their practices. This position was brought forward by the farmers interviewed. Regenerative cooperatives hold slightly more power, as their collective scale provides more financial and organisational capacity. ReGeNL holds even more power given its scale, its backing by and interest of the Dutch government, and its financial resources. However, several

farmers expressed criticism of how these resources are allocated, noting that funding often flows towards expensive research projects that do not directly benefit farmers in practice.

Residents of the Zuid-Hollandse Delta hold power through their voting rights across all layers of governance (from EU to regional). However, their interest in regenerative agriculture is variable: while regenerative practices can bring benefits to the region, such as improved landscape aesthetics and biodiversity (Sher et al., 2024), whether individual residents prioritise this is a personal choice. Consumers are placed similarly in terms of interest, for the same reason: individual interest depends on personal priorities and awareness. In terms of power, consumers can be seen as an important force for change. The demand that they create for regenerative products, can drive a transition. This was also articulated by farmers in this research. However, this power is conditional: the individual consumer has very limited influence, and it is only as a collective that consumers can exert meaningful pressure. Since consumers do not constitute an organised group, this collective power is latent rather than actively exercised. Consumers are therefore categorised as medium power and medium interest. Knowledge institutions hold moderate power through their signalling role: their research informs policymakers, farmers and companies. Although knowledge institutions often position themselves as neutral, the choice of what to research is itself an exercise of power. They are placed at a position of medium interest, as institutions do not necessarily have a direct interest in a regenerative transition. The media shape public opinion, which in turn influences consumers, voters, and companies, giving them considerable power. Since individual media outlets vary widely in their stance towards agriculture, they are placed in the middle on the interest axis.

LTO Nederland holds power, as it is regularly consulted in policy processes at the municipal, provincial, and national level and represents a large membership base. Its interest is placed in the middle: while it represents all farmers, including those pursuing regenerative practices, it does not necessarily advocate for the values that underpin the regenerative transition only.

Big Agro, including agrochemical companies, large retailers, processors, and financial institutions such as Rabobank, is placed at very high power and low interest in the regenerative transition. These actors benefit from the current agricultural system and have little financial incentive to support a fundamental departure from it (Conti et al., 2021). These incumbent actors in agri-food systems actively maintain and defend the existing productivist model, with little regard for sustainability objectives, which might threaten their highly profitable business models (Conti et al., 2021). The dominance of large firms (such as Rabobank, FrieslandCampina, Unilever, Ahold, and Vion) over parts of the supply chain, including inputs, financing, and market access, constrains farmers' choices in terms of what to grow and how to grow it, increases their reliance on a narrow range of commercial inputs, limits their access to financing suited to different (including sustainable) practices, and creates pressure to produce at scale and at low cost (Bronkhorst, 2024; Conti et al., 2021). So, farmers seeking to transition to regenerative practices risk losing income, contracts, or financial support, inhibiting their ability to change.

Policy actors are placed at high power and high interest. The European Union holds the greatest institutional power, as it sets the overarching legislative and financial framework within which all other actors operate, mostly through the CAP. This power trickles down through the national government, which translates EU frameworks into national programmes, to the provincial level, and finally to municipal actors. At each level, policy actors have power in the form of legislative authority and financial instruments, giving them influence over the conditions under which farmers operate. Interest is high across all levels, as sustainability in agriculture is a goal at every layer of government. However, an implementation gap exists between stated policy ambitions and the actual support experienced by regenerative farmers in practice.

The waterboard is the actor within the water management system that is most directly in contact with farmers on a day-to-day basis. It therefore has practical influence over farming practices through its management of water levels, ditch maintenance, and ecological zones. However, while RA is in its interest, as improved soil quality and reduced chemical run-off directly benefit the water quality,

quantity and security objectives the waterboard is mandated to uphold, it lacks the financial and legislative power to drive structural change in the agricultural system.

Nature occupies a dual position in terms of power, depending on the time horizon considered. In the long term, ecological systems hold the greatest power of all, as agricultural production is ultimately dependent on healthy soils, water, and biodiversity. In the short term, however, nature has no conscious agency and, therefore, the lowest functional power in the system. On both time horizons, nature has a clear interest in the regenerative transition, as regenerative practices are associated with positive ecological outcomes (Sher et al., 2024).

Conventional farmers were not included in the power-interest grid. Their position is difficult to place, as their relationship to RA varies per individual farmer. Averaging these positions into a single point would not lead to any meaningful placement. Nevertheless, conventional farmers are an important stakeholder group in the context of this research. They represent the majority of agricultural actors in the Delta, and they are ultimately the group whose transition towards regenerative practices would be most consequential for achieving a regenerative food system.

4.3 Implications for this research

This stakeholder analysis has three implications for the rest of this research. First, it provides context for understanding the institutional and technological conditions within which regenerative agriculture in the Zuid-Hollandse Delta is embedded. The analysis suggests a complex stakeholder system characterised by a concentration of power where financial interests are greatest, particularly within Big Agro actors. It also shows how the institutional landscape is further shaped by agricultural policy across multiple governance levels. Furthermore, it reveals the role of the waterboard as the most important actor governing the hydraulic system in the Delta.

Second, the analysis guided the selection of interview participants. Regenerative farmers and nature occupy marginalised positions in the system: high interest, low power. Placing these at the centre of the analysis is therefore normatively justified. Given that the ecological effects of regenerative agriculture are already receiving a lot of attention in current research, I chose to instead focus on the farmer's perspective. Policy actors and the waterboard hold both power and interest in the transition and shape the institutional and technological conditions for RA farmers, making them relevant interviewees. Due to the limited responsiveness of higher-level policymakers to interview requests, a municipal official and a representative of an EU subsidy programme were interviewed. The selection of stakeholders was informed by two factors: relevance to the research questions, as described above, and accessibility to the researcher. Due to that last factor, not every important stakeholder group could be included. Big Agro, for instance, is a significant actor whose value orientations would be relevant to this research. Their importance, however, became fully apparent only later in the research process, at which point engaging with them was no longer feasible within the available timeframe. Regenerative cooperatives and ReGeNL were also identified as groups with high interests. However, they did not respond to outreach. This research, therefore, centres the perspective of the regenerative farmer and future research should include other perspectives (also see Section 8.3).

A final implication comes from the levels of agricultural policy within the Zuid-Hollandse Delta. The four levels identified here (EU, national, province and municipal) informed the document collection of the discourse analysis, as is further explained in Section 5.2.2.

5 | Methodology



This chapter introduces the methodology of this research. I start by introducing the research design, in which the flow of the research is captured, and the purpose of each method is shortly introduced. Following this, I introduce all the data collection methods in more detail. Then, I explain how this data was analysed and integrated. Finally, I introduce the ethical procedures applied in this research.

5.1 Research Design

This section introduces the research design of this study.

As introduced in the introduction (Chapter 1), this research examines regenerative agriculture through a moral value lens within a complex socio-technical-ecological system (the ZH Delta). Values can be expressed in many different ways: they are present in the language of texts and in conversation, and enacted in farming practice. No single method can access all of these modes of expression simultaneously. A mixed-methods approach was therefore selected, consisting of a stakeholder analysis, discourse analysis, participatory observations, and interviews. This mixed-methods approach also allows for triangulation across methods, which strengthens the robustness of the findings. It has allowed me to observe patterns across discourse, observation, and interview data. Moreover, the combination of methods allowed me to stay critical of my own biases. The start of every next method required reflection on my results and biases from the previous phase. Last, a mixed-methods approach is valuable when looking at STES such as the Zuid-Hollandse Delta. It enabled me to make the perspectives of the different dimensions of this system (social, technical and ecological) explicit through the different approaches.

Because this mixed methodology has the potential to inspire other researchers, reflections were written on its strengths and limitations after completion of each method. They can be useful for future researchers considering similar approaches, but also serve as a means to be transparent about the limitations of this research.

5.1.1 Research flow

Figure 5.1 provides a schematic overview of how the methods, data sources, research questions, and outputs of this study relate to one another. The research began with a literature review, in which the research gap and the conceptual and theoretical foundations of the study were identified. As this method did not directly contribute to answering the research question, but rather served as an orientation phase, it has not been taken up in the figure, nor in the methodology. Next, in the stakeholder analysis, the actors and their interactions within the food system of the Zuid-Hollandse Delta were mapped. This gave context to the research and informed the selection of interviewees and observations, and the different levels of policy documents in the discourse analyses, see Section 4.3.

To address the three sub-questions in this research, three core methods were used: a discourse analysis, participant observations, and interviews. The discourse analysis was used in two ways: first, to identify which values are associated with regenerative agriculture in practitioner and scientific literature (SQ1), and second, to compare how values are framed across RA discourses (practitioner and scientific) and agricultural policy discourses (SQ3). The participant observations explored values in the lived experience of farming at four sites, and contributed to both SQ1 (values in practice) and

SQ2 (value conflicts as they arise in everyday decisions). The interviews supplemented the findings from the discourse analysis and observations by asking stakeholders directly about their values and the trade-offs they experience (SQ1 and SQ2), and by exploring how institutional and technological conditions interact with the regenerative value landscape through conversations with policymakers and a waterboard member (SQ3).

An additional method was autoethnographic research. It grounds a value conflict and a recommendation in the discussion and contributes to the transparency and accountability of the research process. This was an auxiliary method that only contributed marginally to the conclusions of this research. It has therefore not been included in Figure 5.1, but has been taken up in the methodology, see Section 5.5.

Together, the methods produced four outputs: a moral value framework of regenerative agriculture in the Zuid-Hollandse Delta (SQ1), an identification of internal value conflicts (SQ2), an understanding of how institutional and hydraulic conditions mediate the value landscape (SQ3), and the final result, based on all the previous findings, is policy recommendations to support a regenerative transition in the region.

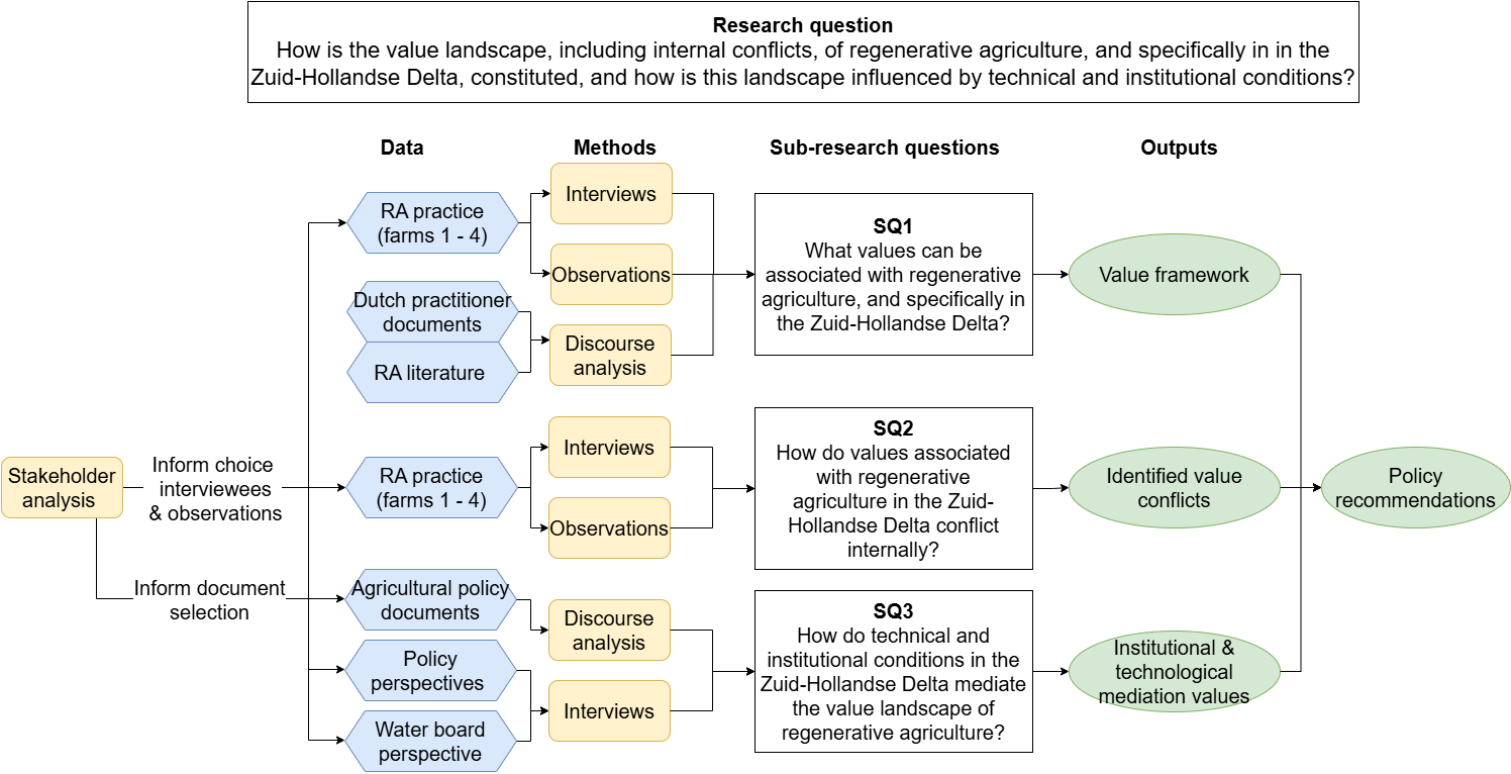


Figure 5.1: Research flow diagram showing the relationship between data sources, methods, research questions, and outputs.

5.2 Discourse analysis

The discourse analysis aims to explore what values are articulated within RA discourse and within agricultural policy, and to compare these two fields. These findings are used to understand the value landscape of RA (SQ1), and the institutional conditions (SQ3). Three document domains are included in this analysis. The first two capture the regenerative agriculture discourse: practitioner publications reflect the values of farmers and advocates engaged in regenerative practice, while scientific literature reflects how researchers look at the field. The third domain consists of agricultural policy documents. To execute this analysis, I built a Python-based pipeline that incorporates a Large Language Model (LLM) for value analysis. The procedure consisted of two phases: the selection of the documents for each discourse and the analysis itself. In this section, this method is first introduced, followed by a

description of both phases.

5.2.1 Introduction of the method

This section introduces the method, its application and the use of LLMs within the method.

Introduction of discourse analysis

Discourse analysis is a method rooted in the study of language as social practice. It claims that the words we choose, and the way we choose to use them, construct meaning and reflect underlying worldviews, power structures, and social codes (Kivle & Espedal, 2022). In this project, a discourse consists of a body of text produced by one stakeholder group. In these written texts, language is used to create the meaning that the author intends and thus reflects the values of the author (a person or institution). The choice of words contains traces of both intentional and unintentional assumptions about how the world is and how it ought to be (Kivle & Espedal, 2022). Analysing these texts is thus well-suited to identify values through the language people use to describe and justify their actions and commitments.

LLM-supported discourse analysis

There are different methods to conduct a discourse analysis. It can be done manually by the author, but a method that is increasingly used is quantitative text analysis (or mining) tools (Jacobs & Tschötschel, 2019). An example of this is probabilistic topic modelling. This is a computational method that identifies clusters of words that co-occur across a large corpus of texts, and can be used to support discourse analysis by revealing patterns of language use and meaning-making at a scale beyond what manual reading alone allows for (Jacobs & Tschötschel, 2019). However, this method is still time-intensive, and new methods are emerging. One of these methods is LLM-supported text analysis (Törnberg, 2023), which is the method I apply for the discourse analysis.

Large Language Models are artificial intelligence systems developed to understand and produce human language. They employ deep learning techniques based on mathematical models of brains. They are trained on large amounts of text data, enabling them to learn patterns, semantics, and grammar on a large scale (Törnberg, 2023).

LLMs are well-suited for text analysis for several reasons. They are capable of handling tasks that have traditionally been beyond the reach of computational methods, including subjective interpretation, contextual inference, and the recognition of irony and sarcasm. They can also analyse text across languages and contexts (Törnberg, 2023). Furthermore, they are fast and require little programming experience.

However, there are also limitations. LLMs are sensitive to how instructions are formulated, meaning that the quality of the output depends heavily on the precision of the prompt given to the model. They also embody the biases present in their training data, and should therefore not be understood as a neutral or objective analytical tool. Additionally, their outputs are stochastic or non-deterministic, meaning repeated runs on the same input may produce different results, which raises questions of reproducibility (Törnberg, 2023). Extensive validation is therefore very important when working with LLMs. Furthermore, LLMs come at environmental and social costs, which I have reflected upon in section 5.2.4.

To handle these shortcomings consciously, I limited the use of LLMs to what the model is suited for (reading and interpreting language in its context) and avoided using it for deterministic data processing that conventional code can do more reliably and without the costs of LLMs.

5.2.2 Phase I: document selection

To start analysing the discourses, one must first collect the documents. I selected publications from three literature domains: peer-reviewed scientific literature, grey literature from regenerative

agriculture farmers and organisations, and Dutch agricultural policy documents and piled them into separate corpora. The results of the selection are presented below for each corpus.

Scientific literature

The articles were selected using the databases Web of Science (WoS) and Scopus. These databases were selected as they both have extensive coverage of high-quality, peer-reviewed journals across multiple disciplines and are widely recognised for their high indexing standards and comprehensive citation tracking. The detailed selection procedure and overview of all included publications, categorised by sub-theme, can be found in Appendix B.1.

The final body of scientific literature consists of 42 peer-reviewed academic articles complemented by two reports from Wageningen Economic Research. Together, these documents provide a broad overview of how RA is conceptualised and analysed within academic research relevant to the Dutch and North-West European context.

Across the selected articles, several recurring themes can be identified. A substantial part of the literature focuses on ecological and agronomic dimensions of regenerative agriculture, like soil health, carbon sequestration, and biodiversity. Another group of publications examines socio-economic and governance aspects, such as farmer behaviour, policy instruments, and economic viability. A third strand explores conceptual and discursive dimensions of regenerative agriculture, including definitions, narratives, and transformative potential.

Several journals appear repeatedly within the dataset, reflecting key publication outlets for this topic. These include *Agriculture and Human Values*, *Agricultural Systems*, *Frontiers in Sustainable Food Systems*, *Soil & Tillage Research*, and *Environmental Innovation and Societal Transitions*.

Practitioner discourse

The practitioner discourse consists of publications produced by Dutch practitioners and practitioner-oriented organisations engaged in regenerative agriculture. The aim was to compile a corpus of practice-based documents in which RA is discussed from an implementation, advisory, or communication perspective, rather than from an academic standpoint. In total, 16 documents were selected. Included documents contain reflections on regenerative agriculture by farmers, representatives of farmers, or NGOs and programmes dedicated to its development and application. The full list and procedure is provided in Appendix B.2.

Policy documents

As was found in the stakeholder analysis, different levels of governance play a role within regenerative farming in the ZH Delta (Section 4.3). For that reason it is also relevant to examine these different levels within the discourse analysis. So, policy documents from the four most relevant levels have been selected: EU, national, regional (province), and local (municipal). Since no explicit policy on RA exists, this discourse consists of policy documents focused on agriculture in general. Below, the documents per level are explained, the selection procedure can be found in B.3.

Local (municipality), n = 2

The Zuid-Hollandse Delta is comprised of 4 municipalities: Hoeksche Waard, Nissewaard, Voorne aan Zee and Goeree-Overflakkee. Therefore, I wanted to select one policy document from each municipality. However, to the best of my knowledge, both Voorne aan Zee and Nissewaard did not have any publicly available policy focused on agriculture. Therefore, no documents from these two municipalities could be included. The final list of documents is:

- Landbouw visie (agricultural vision) Goeree-Overflakkee.
- Visie op multifunctionele landbouw (vision on the multifunctional agriculture) Hoeksche Waard

Food for thought: the absence of municipal policy documents

The fact that neither municipality has published any policy documents on agriculture, only a brief statement on their website, is in itself a meaningful finding. It could indicate that agriculture is not a high priority within these municipalities, or that there is limited transparency surrounding the topic. At the same time, this absence could also reflect practical constraints such as limited staffing, expertise, or administrative capacity, rather than a deliberate lack of attention.

Regional (province), n = 5

The Zuid-Hollandse Delta is situated in the province Zuid-Holland, so policies from this province have been selected. The list of documents is:

- Hoofddiinnennotitie vitale landbouw (Outline minutes vital agriculture) Zuid-Holland.
- Ambitiedocument Innovatie Agenda Duurzame Landbouw (Ambition document innovation agenda sustainable agriculture)
- Samenvatting van het Maatregelenpakket voor het Zuid-Hollands Programma Landelijk gebied (Summary of the Package of Measures for the South Holland Rural Area Program)
- Landbouwsubsidies (Agricultural subsidies) Zuid-Holland
- Agenda landbouw (Agricultural agenda)

National, n = 7

Seven Dutch policy documents were selected for the analysis. Given the wide range of publicly available policy material, I deliberately chose to focus on the most recent coalition agreement and a set of 'Kamerbrieven'.

The coalition agreement was included because it outlines the overarching political vision, priorities, and intended policy direction of the newly governing parties. Including the coalition agreement, therefore, allows the discourse analysis to capture both ambitions and underlying political narratives. In addition, 'Kamerbrieven' (parliamentary letters) were selected, in which policy intentions, strategic approaches, progress updates, and responses to parliamentary questions are given. They were chosen specifically because they provide direct insight into how the government frames policy issues, justifies decisions, and communicates priorities and are therefore particularly suitable for this discourse analysis.¹

The complete list of selected documents is provided below.

- Coalitieakkoord (Coalition Agreement)
- Kamerbrief over implementatie Gemeenschappelijk Landbouwbeleid (Parliamentary letter on the implementation of the Common Agricultural Policy)
- Kamerbrief over knellende wet- en regelgeving voor de multifunctionele landbouw (Parliamentary letter on restrictive laws and regulations for multifunctional agriculture)
- Kamerbrief over perspectief voor agrarische ondernemers (Parliamentary letter on future perspectives for agricultural entrepreneurs)
- Kamerbrief Ruimte voor Landbouw en Natuur (Parliamentary letter on space for agriculture and nature)
- Kamerbrief over biologische landbouw (Parliamentary letter on organic agriculture)
- Kamerbrief Gemeenschappelijk Landbouwbeleid 2026 (Parliamentary letter on the Common Agricultural Policy 2026)

¹It is important to note that recent (October, 2025) national elections in the Netherlands resulted in a shift from a more conservative to a more liberal governing coalition. However, as the new coalition had only recently taken office at the time this research was conducted, it had not yet produced a body of policy documents. Consequently, all of the analysed Kamerbrieven originate from the previous, more conservative government or earlier. The findings should therefore be interpreted within that political and temporal context. To also include the current government's perspective, the coalition agreement was included.

European, $n = 1$

The most important European policy focused on agriculture is the CAP, also see section 4. Therefore, the document 'CAP 2023-27 – 28 CAP Strategic Plans at a glance' has been selected for this level.

5.2.3 Phase II: Analysis

After the document selection, this section details the execution of the analysis. First, the analytical workflow is explained, followed by the technical implementation of it, which contains more details of the execution.

Analytical workflow

After collecting all the documents, phase II begins with three sets of raw PDFs (scientific, policy, and practitioner). These documents are processed and analysed using a combination of Python-based text processing and a Large Language Model via the Gemini API (gemini-2.5-flash). Figure 5.2 provides a schematic overview of the procedure.

The use of LLMs in the workflow has been minimised to two specific steps, as indicated by the yellow circles in the figure. All other steps were either executed manually by the author or through a Python pipeline built by the author. The LLM was used to support the identification of values across a large body of texts, a task that would not have been feasible manually at this scale. However, the interpretation, the validation of the model's outputs, and all analytical conclusions remained the full responsibility of the researcher.

The analytical workflow consists of three main stages: pre-processing (green in the figure), creation of a list of value indicators (purple), and identification of values (blue). Below, the procedure is explained step by step.

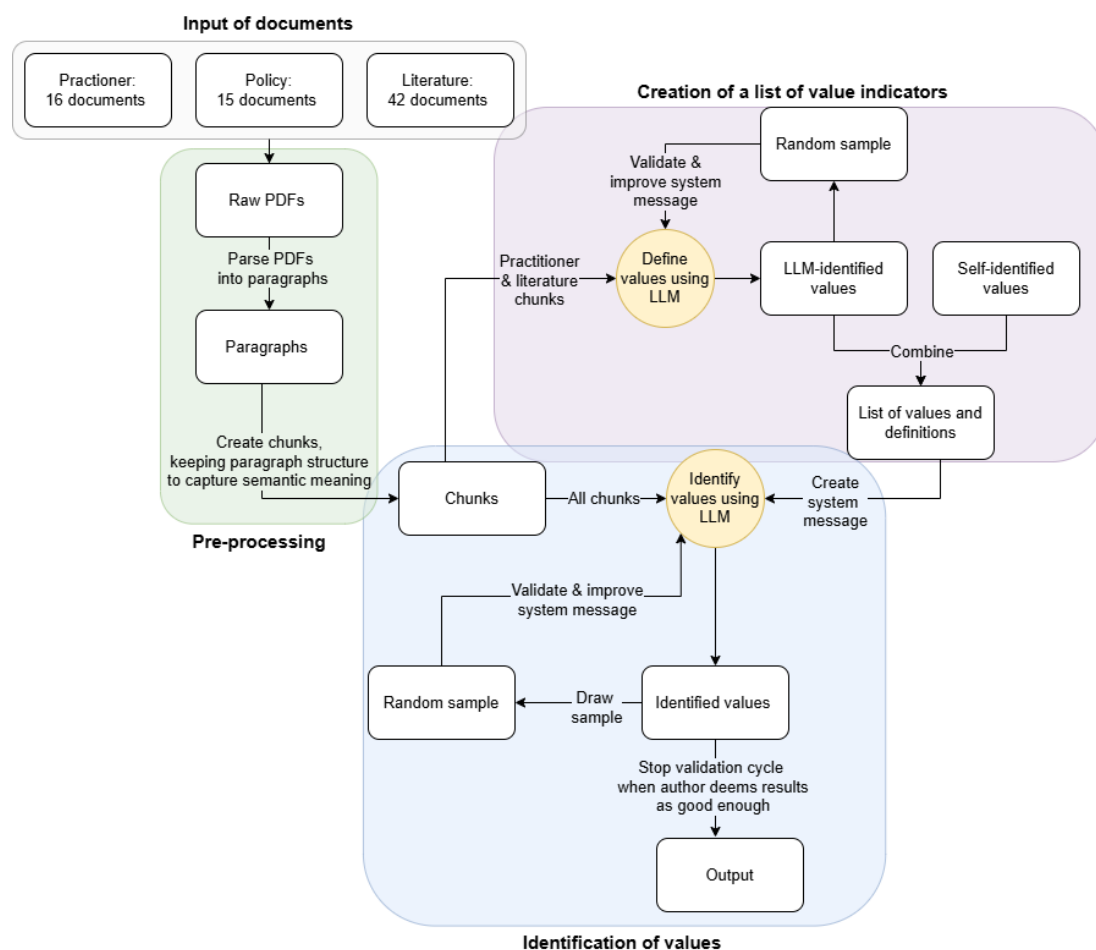


Figure 5.2: Procedure for the discourse analysis

Pre-processing The pre-processing of the documents into text chunks consists of two consecutive steps, both were executed in a Python script that I made:

1. Parsing PDFs into paragraphs

The raw PDFs are pre-processed by parsing them into paragraphs. This ensures that the original structure of the text is preserved as much as possible.

2. Chunking

The translated paragraphs are combined into chunks of approximately 300 words. The chunk length determines the contextual information available to the LLM and thereby affects its ability to interpret semantic meaning. The paragraph structure is maintained: each chunk consists of at least one full paragraph and never splits a paragraph. This reduces the risk of decontextualised interpretation by the LLM later on.

Creation of a list of indicators To identify values in the texts, I first developed a list of value indicators with clear definitions of the values manually. I then used the LLM (embedded in a Python script) to explore the practitioner and scientific discourses for values that had not yet been captured in this initial list. This value discovery phase involved prompting the model to extract values from the texts, without constraining it to a predefined value list. The procedure is as follows:

- **Creation initial value list**

I constructed the initial value list manually, based on my prior knowledge and the literature review conducted. The list is presented below, for the definitions and keywords see Appendix B.5.

1. Care for nature
2. Intergenerational justice
3. Intragenerational justice
4. Positive relationality
5. Relationality tension
6. Restoration
7. Sense of place

- **Selection from practitioners and scientific corpora**

To improve this list, all documents (in the chunks) from the practitioner and scientific corpora are used. This selection is directed by the author and executed in Python. The policy corpus is excluded at this stage, as the purpose of this step is to refine the value list specifically for regenerative agriculture and policy documents do not focus on RA.

- **Iterative prompt development**

I developed a prompt that includes the preliminary list of indicators and instructs the LLM to identify additional relevant values and suggest refinements.

Because prompt quality significantly influences output quality I improved it iteratively. I did this by drawing a random sample from the results, using Python, and validating these results. I tried different variations in wording, structure, and instructions until the results were considered good enough by me.

- **Synthesis of value list**

I then processed the raw results of the value discovery into a usable format using Python. Following this, I compared the values identified by the LLM with the initial list. I synthesised both sets into a final list of indicators.

Extraction of values All chunks from all corpora were then analysed using the LLM and the finalised list of indicators.

1. Iterative prompt development

I developed a prompt that includes the list of value indicators and instructs the LLM to identify these values in each chunk.

Again, because prompt quality significantly influences output quality I improved it iteratively. I did this by drawing a random sample from the results, using Python, and validating these results. I tried different variations in wording, structure, and instructions until the results were considered good enough by me.

2. Output

The LLM uses the final prompt to identify the values in all chunks. The output which the LLM returns is then processed in Python to generate the final results of the discourse analysis. Following this, I interpreted all results.

Technical implementation

This section explains how the analytical workflow is translated into a model and its outputs. First, I introduce the scripts, followed by an introduction of the most important terms in the model and a detailed introduction of the three use cases developed for this research. Finally, the processing of the results, the validation procedure and the reproducibility check are introduced.

Definitions The following definitions introduce how important concepts were defined in the model.

- **Value**

A priority, ideal, or purpose that guides how actors judge what is good, desirable, important, or acceptable. Values express goals or states of affairs that are worth striving for. Values are normative because they indicate what should be pursued.

Example: Care for nature means taking responsibility to respect, protect, preserve, and restore ecosystems, plants, and animals.

- **Norm**

Norms are rules or shared expectations that guide behaviour based on a value. They prescribe, recommend, or forbid certain actions in order to support that value. Norms answer the question: *"How should one act to support this value?"*

Example: A norm connected to caring for nature is maintaining biodiversity.

- **Practice**

A practice is a concrete action or behaviour that follows a norm in order to realise a value. Practices translate norms into real-world activities. They answer the question: *"What do people actually do in practice?"*

Example: A practice to maintain biodiversity and care for nature is not using pesticides.

- **Audience**

The group or actor for whom the value is relevant or beneficial. This answers the question: *"Value for whom?"*

List of options: nature, farmer, society at large, community visiting the farm, industry, bank, government, knowledge institution (science).

- **Context**

The context within which the value is placed, as adapted from (te Kulve et al., 2013).

"promise": value used within an optimistic context, explaining the benefits/potential gains.

"concern": value used within a negative context, explanation of risks/problems/harms.

Scripts To operationalise the analytical workflow, eight Python scripts were developed, of which seven were used in the final analysis. Together, these scripts create a modular pipeline from raw documents to outputs. In Appendix B.4 a link to the model can be found.

A detailed description of the scripts can be found in Appendix B.7, but a short introduction is given below. Only in script 3 is an LLM used, the rest consist of regular Python code, with no LLM component.

- **Scripts 1 and 2: Preprocessing.** These scripts handle the preprocessing of the raw PDF documents, as described in Section 5.2.3. Script 1 parses the PDFs into paragraphs, and Script 2 combines these into chunks of approximately 300 words.
- **Script 3: LLM-based extraction.** This script executes the LLM-based analysis. It takes a set of document chunks as input and applies a use case (see explanation below) to instruct the model on what to look for and how to structure its output.
- **Script 4: Intermediary reporting results.** This script was used as an intermediary check during the development phase to inspect and visualise intermediate outputs, allowing me to check how results were taking shape before the final analysis. It was not used in the final analysis.
- **Script 5: Validation.** This script selects random samples of chunks and their LLM outputs for manual review (validation) by the researcher.
- **Script 6: Processing of value discovery results.** This script processes the outputs of the discovery use case into a structured overview of values that were discovered.
- **Script 7: Processing of value extraction results.** This script processes the outputs of the extraction use cases into the frequency distributions and visualisations used in the results chapter.
- **Script 8: Reproducibility check.** This script assesses the consistency of the LLM outputs across repeated runs on the same sample, as described in Section 5.2.3.

Use cases An important design feature of this pipeline is the application of use cases to script 3. A use case is a configuration of parameters that allows the same script to be used for different types of analytical tasks. For each use case, the researcher determines: which types of documents are used as input (policy, scientific, or practitioner), which type of prompt is applied (value discovery or value extraction), and what type of output is expected. This makes this discourse analysis model flexible and reusable: the same infrastructure can be applied to different research questions, corpora, or value tasks without rebuilding the underlying code.² Developing the model in this modular way is therefore not only efficient but also an example of responsible use of a new method, as it makes the approach transparent, adaptable, and available for future research. The use cases are applied in Script 3 and split the LLM-supported value analysis into two main phases: value discovery and value extraction. A summary of the most important design choices per use case can be found in Appendix B.6, and they are briefly introduced below.

The value discovery phase aims to identify relevant values from the practitioners and literature discourses to extend the manually created value list (this refers to the 'Creation of a list of indicators', Section 5.2.3). The use case 'discover_values' is used to identify new RA values that are not yet included in the manually identified list from practitioners and scientific texts. For each chunk, the model first determines whether the text is related to regenerative agriculture. If so, it can suggest new values if they emerge in the chunk, including a name, description, keywords, and an example quote. The final output is used to create the final list of value indicators.

The extract phase builds on the discover phase, as it uses the final list of value indicators to extract values from the different discourses (this refers to the 'Extraction of values', Section 5.2.3). For this phase, two use cases were developed. The use case 'extract_values' uses the previously developed list of regenerative value indicators to analyse practitioner and scientific texts to identify which values are present in each chunk. In addition, it captures whether the text is related to regenerative agriculture, the context (promise or concern) towards each value, and if possible, also records the intended audience, related norms, and associated practices.

The third use case, 'extract_policy_values', applies the same extraction logic to policy texts. Based on the value list developed in the first use case, it identifies whether the text is related to agriculture, which values are present in policy text, their context, and optionally for whom they are expressed

²This is only true for scripts 1-3 (preprocessing through analysis), all scripts that validate or process results and the reproducibility check were designed specifically for this project and cannot be reused without alteration.

(audience). This separate use case was needed for policy texts because, unlike the practitioner and scientific discourses, policy documents are not specifically about regenerative agriculture. The prompt, therefore, could not instruct the model to look for RA-related values specifically, but instead had to extract values from general agricultural policy text. So, a slightly different prompt was needed and thus a different use case.

Validation As explained above, the quality of the prompt is important for the reliability of the results. Therefore, an iterative validation procedure was applied to all three use cases. For each validation cycle, a test run was executed on two randomly selected documents from each discourse. From this run, eight chunks were randomly selected and manually validated. The findings of this validation were summarised and used to improve the prompt or script.

This process of sampling, validation, reflection, and improvement was repeated:

- Six times for use case 1 (discovering values), resulting in version 7 of the prompt, which was used for the final analysis.
- Seven times for use case 2 (extracting values), resulting in version 8 of the prompt, which was used for the final analysis.
- Five times for use case 3 (extracting policy values), resulting in version 6 of the prompt, which was used for the final analysis.

All validation steps, intermediate findings, and prompt adjustments were systematically documented. The full validation results can be found in Appendix B.9.

Processing results use case 1 (discovering values) After running the final version (v7) of the prompt over all the documents in 'discover_values', 2191 value instances were extracted. These were processed in Script 6 through the following pipeline.

First, each value suggestion was recorded as an individual occurrence. A filter was applied to include only regenerative-related chunks.

Next, I normalised value names (e.g. standardising spacing and punctuation) to reduce language-based variation. This resulted in a reduction from 2191 to 1209 unique value labels.

Subsequently, all 1209 values were clustered into 45 canonical value categories using a synonym map. I created this synonym map by going through all values and manually developing the clusters.

In addition to the 45 new values, separate clusters were maintained for six of the predefined values from the original value list (restoration, care for nature, intergenerational justice, intragenerational justice, positive relationality, and sense of place), as well as for entries classified as "not a value." The latter category includes instances that were either incorrectly identified as values or insufficiently substantiated. It should be noted that some resulting clusters (e.g., sustainability and pragmatism) do not strictly constitute values, but were retained as they emerged as recurring themes within the dataset.

Finally, this resulted in an overview of values and their corresponding frequencies as presented in Appendix B.8. From this list, I selected values to be added to the final value list, based on whether I considered the category a genuine value, and how frequently it appeared across the corpus. The following values were selected:

- Agency
- Autonomy
- Aesthetic value
- Pluralism
- Human fulfillment
- Physical well-being
- Integrity
- Community

- Economic viability
- Efficiency
- Security
- Collaboration
- Resilience
- Learning
- Innovation and experimentation
- Productivity

The final indicator list with all values, definitions and keywords can be found in Appendix B.8.2.

Processing results of use cases 2 and 3 (extracting values) Processing of both value extraction use cases occurred in Script 7. The 'extract_values' use case (prompt version v8) was applied to practitioner and scientific literature documents. For each chunk, the model returned a structured JSON including a relevance flag (`is_regen_related`), extracted values from the final value list, evidence quotes, context (promise or concern), and optionally an audience and norms and practices related to the value. All further processing used only chunks marked as being related to RA (`is_regen_related` = true), other chunks were excluded from processing. Several outputs for interpretation and reporting were generated using Python-based processing, which are presented in the results. The audience, norm, and practice fields were not used in the final results, due to time constraints and limited relevance to the core research questions.

The 'extract_policy_values' use case (prompt version v6) was applied to the policy documents. For each chunk, the model returned a structured JSON including a relevance flag (`is_agriculture_related`), extracted values from the final value list, evidence quotes, context (promise or concern), and optionally an audience. All further processing used only chunks marked as being related to agriculture (`is_agriculture_related`), other chunks were excluded from processing. Again, several outputs for interpretation and reporting were generated using Python-based processing, which are presented in the results.

Reproducibility The extraction of the values was tested for reproducibility, as this is a possible pitfall of LLM analyses, see Section 5.2.1. To assess the reproducibility of the LLM extraction, the same small sample was analysed three times for the same use case. Each run analysed two documents per discourse (fixed selection via a random seed). Then, comparisons of the results were performed at the chunk level and at the document level. Full reproducibility statistics are presented and interpreted in Appendix B.10, a short summary is provided below.

Chunk-level agreement on which values were extracted was moderate (mean Jaccard similarity ≈ 0.63 – 0.67), indicating some run-to-run variation at the level of individual chunks. However, document-level distributions (how often each value and each audience category appears across the full document, instead of per chunk) were much more stable, with Pearson correlations consistently above 0.97 across all pairwise run comparisons. All findings are therefore reported and interpreted at the level of aggregated distributions, where reproducibility is high, rather than individual chunks.

5.2.4 Reflection on the method

In this section, I reflect upon ethical dilemmas regarding the use of LLMs for discourse analysis. I then reflect upon its application for value extraction.

Ethical reflection

LLMs are known for their high water and energy usage. Using LLMs for a study that aims to contribute to a more environmentally friendly world therefore introduces a disparity. This cannot be mitigated, and so these ethical concerns must be made explicit and reflected upon.

The system we are currently living in, is an unsustainable one, which favours efficiency over care.

One of the products of this system is AI. A software that allows for a much higher efficiency at environmental (water, energy, etc.) and social (loss of knowledge, jobs, etc.) costs. However, a question can be raised whether these costs are justified when the use of AI leads to a result that is better than it could have been without its use. In the case of this thesis, the discourse analysis could not have been performed to this extent with another tool. For example, the analysis could have also been done using probabilistic topic modelling, but that method is too time-intensive for the scope of this project.

Additionally, I hope that this work contributes methodologically. I hope it offers insights into the use of this method for purposes similar to mine, and my transparent use and documentation of the use can provide a pathway for ethical use of the tool.

It must also be recognised that research is never neutral and always comes at a cost. A researcher always makes a choice that these costs are worth the output. Would I have done this research with another model, this too would have cost energy, water, autonomy, etc. Therefore, I believe that making this choice explicit should be a part of every research, not just research using LLMs.

I fully recognise the need for a more sustainable system and hope to contribute to moving a step closer to this. Yet, for me, the use of AI within the context of this research is justified 'enough'. I thereby accept the negative consequences, in the hope and belief that the application contributes more than it costs.

Reflection on the use for value extraction

The following reflections are offered for researchers who are considering a similar approach.

A first consideration concerns reproducibility. As the reproducibility analysis (Section 5.2.3) shows, chunk-level extraction varies across runs, even when the model, prompt, and seed were held constant. Given the time constraints of this project, it was not possible to run more iterations to correct for this stochasticity. Due to the non-deterministic nature of these models, full reproducibility would probably also not be possible. The findings should therefore be understood as exploratory rather than definitive. With more time and repeated runs, more stable outcomes could have been produced, but researchers should always be transparent about this limitation when reporting results.

A second consideration concerns validation. Because the model operates as a black box, frequent and systematic validation checks are essential. This also forces the researcher to engage closely with the dataset in a way that purely automated analysis would not. It also requires the researcher to articulate clearly what they are looking for before asking the model to find it. Vague or underspecified research goals translate into irrelevant model outputs. I see this as an advantage of the method: it forces you to be very clear on what you want before being able to use the method.

A third consideration concerns the specification of the prompt. The model was first asked to identify new values (so not choosing from a predefined list). In practice, this approach proved very time-intensive to validate and produced outputs that still cost a lot of time to process manually. Supplying the model with an explicit and well-defined value list yielded more consistent and interpretable results. For future research of this kind, I therefore recommend using this method for extracting values from a pre-existing value list, rather than open-ended discovery runs.

5.3 Participant observations

Following the discourse analysis, participant observations were conducted at four farms. In this qualitative method, a researcher immerses themselves in the daily activities of a community or group to understand their behaviours and perspectives from an insider's perspective (Dean Sharpe, n.d.).

This method serves three purposes in this research. First, it grounds the values identified through the discourse analysis in the lived experience of regenerative agriculture as it is practised on the farm. It contributes to SQ1 by capturing values as they appear in practice and showing how regenerative agriculture as a compound value is constituted differently across farm sites. Second, it makes obstacles and trade-offs visible as they arise in everyday farming decisions and conversations, which allowed for the analysis of value conflicts in SQ2. Third, the observations provided insight into how farmers experience and navigate the institutional and technological conditions within which they operate,

offering their perspective on the mediation of the value landscape that complements the discourse analysis and interviews in SQ3.

5.3.1 Justification of the method

Participant observation is particularly suitable for this research because farming is a deeply embodied and experiential practice (O'Connor et al., 2025). Values such as care, connection to nature, or community, are not always easily expressed in interviews or text. Instead, they are often enacted through everyday routines and interactions with both humans and non-human beings. Observing and participating in these practices therefore provides access to dimensions of the value landscape that may otherwise remain implicit.

Reciprocity was another important element of this method. By actively contributing to the work on the farm, I was able to better connect to the farmers and therefore better able to understand them. Participating in activities such as harvesting, weeding, or preparing beds created opportunities for informal conversations and moments of reflection that may not have emerged in a formal interview setting. In several cases, discussions about farming practices, frustrations, or motivations arose naturally during work itself, allowing values to emerge more organically and contextually.

5.3.2 Procedure

I joined four different farmers over a total of seven days. I was an active part of the farm by helping with daily farm activities. I recorded what was happening during my days at the farm through observational notes, which are stored securely and are accessible to the supervisory team. I made small notes on my phone during the day and processed these into more extensive notes at night.

5.3.3 Case studies

Each of the four farms has its own characteristics in terms of scale, organisational structure, and approach to regenerative agriculture, which are introduced below.

Farm 1

Farm 1 is located in the Zuid-Hollandse Delta, close to Rotterdam. It operates as part of a cooperative organisation that purchases land and employs a farmer to manage it. The cooperative has a membership structure through which members receive food produced on the farm, and can optionally contribute to the work through volunteering. This farm provides approximately 200 people with vegetables through this model. It cultivates approximately 40 different types of crops. Operating on a small scale, the farm is organic and implements a range of regenerative practices, including no-tillage cultivation, crop rotation and the complete avoidance of chemical inputs. Little technology is used on the farm. The farm was visited for a total of two days, during which I worked with the farmer and the volunteers. Activities included planting cabbage using a planting machine, covering crops with protective cloths, and cleaning and distributing harvested vegetables.

Farm 2

Farm 2 is located on one of the islands in the Zuid-Hollandse Delta. It is a large-scale family farm of approximately 600 hectares, with several employees supporting the operation. The farm is currently in transition towards fully regenerative agriculture, implementing practices such as cover cropping, crop rotation, and increased crop diversity. However, it remains partially reliant on tillage and chemical inputs, which the farmer is trying to reduce. The farm is highly technological.

The fieldwork at this farm consisted of two visits. I spent the first day alongside the farmer, who was operating highly automated machinery, planting baby crops, fixing broken machines, and inspecting soil quality. The second day consisted of a workshop on regenerative agriculture hosted at the farm, attended by approximately twenty farmers, advisors, and agricultural employees.

Farm 3

Farm 3 is also located on one of the islands in the Zuid-Hollandse Delta. It is a medium-scale family farm of approximately 50 hectares, growing a diverse range of vegetable species and employing several people. The farm is certified organic and fully committed to regenerative practices, operating without tillage or chemical inputs. Technology is used in moderation. A notable feature of this farm is that it also hosts a tiny house community, whose residents regularly volunteer on the farm, contributing to its day-to-day operations.

The farm was visited for 2 days. During the two days of fieldwork, I helped with a wide range of activities: cleaning and sorting cabbages and carrots on assembly lines, preparing and planting seed potatoes, visiting the tiny house community and food forest, and driving across the land to inspect different parcels and soil types. Throughout, there was time for conversations with the farmer, employees, and volunteers.

Farm 4

Farm 4 is located outside the geographical scope of this research, at a more central location in the Netherlands rather than within the Zuid-Hollandse Delta. It was nonetheless included in this research for two reasons. First, visiting a farm outside the defined scope encouraged critical reflection on my, the researcher's, assumptions and biases about this context. This reflection is discussed in Section 8.2.1 of Chapter 8. Second, an existing connection provided straightforward access to the farm, offering a practical opportunity to collect additional empirical data.

Like Farm 1, it operates as part of a larger organisation, but at this farm the farmer rents the land from the organisation rather than being employed by it. The farm operates on a small scale of approximately 7 hectares and works with a volunteer community of around 250 people, of whom a rotating group of roughly 20 come to help on any given day. The farm grows over 80 different types of vegetables, fruits, and herbs. It operates fully organically, without chemical inputs or ploughing. Beyond food production, the farm is explicitly designed as a community space. The property includes a vegetable garden, food forest, experience forest, plant nursery, flower garden, herb garden, and a farm shop. The farm was visited for a single day, which included hoeing by hand alongside the farmer, joining volunteers for weeding and planting, and having lunch together with the group of volunteers.

5.3.4 Reflection on the method

Participant observations proved valuable for the purposes it was intended for, particularly in making values and value conflicts visible in practice.

An important strength of the method was the combination of observation with ongoing informal conversations during farm work. Observation alone would likely not have provided sufficient insight into the meanings and motivations underlying practices. The informal and situated nature of these conversations often led to richer and more nuanced reflections than formal interview settings alone. The reciprocal nature of my participations was also important. Contributing labour to the farms was experienced as a more just and respectful research relationship and was responded to positively by participants. Additionally, this reciprocity helped build trust and openness, which likely improved the quality and honesty of the interactions. Nevertheless, the method remains heavily dependent on the willingness, integrity, and openness of participants.

However, the observations took place over relatively short periods of time (maximum of 2 days), which inevitably limits the depth and completeness of the perspective gained. The research captures snapshots of everyday practice rather than long-term dynamics across seasons or years.

The method also involved constant transitions between the roles of researcher, worker, and human. Managing these shifting positions was at times mentally and physically demanding and occasionally created ethical dilemmas for me. They have been documented in the autoethnographic reflections, see section 5.5.

Finally, participant observation is inherently biased. The researcher decides what to pay attention to, record, and interpret, meaning that observations are shaped by prior assumptions, interests, and sensitivities. Although autoethnographic reflections were used to engage with these biases, complete

objectivity is neither possible nor claimed.

5.4 Interviews

This section introduces semi-structured interviews as part of the methodology. This method was used for getting in-depth insight into the perspectives, experiences, and values of those directly involved in or connected to regenerative agriculture in the Zuid-Hollandse Delta. Below, I first justify the use of the method. Following this, I introduce the interviewees and the contribution of the specific interviews, and then introduce the procedure of the method. I end with a reflection on the method.

5.4.1 Justification of the method

Semi-structured interviews are a useful method to gain insights into the understandings, (world)views and values of stakeholders (Friedman et al., 2017). Asking stakeholders not only what they think about something, but why, surfaces the normative reasoning that underlies their positions (Friedman et al., 2017). Value conflicts can be explored by asking for trade-offs that stakeholders encounter in their practices. The semi-structured format is especially fitting in this regard, as it allows the interviewer to remain open to topics that the stakeholder themselves introduce into the conversation.

5.4.2 Interviewees

Seven interviews were conducted for this research. Participants were recruited through email. Table 5.1 provides an overview of all interviewees, a description of each interviewee and the sub-research question(s) the results were used for. This section explains why these interviewees were selected and what the interviews contributed.

Table 5.1: Overview of interviewees, their description and what sub-question they contributed to.

Interviewee	Description	Sub-question
Farmer 1	Small-scale farmer, part of a cooperative farm in the Zuid-Hollandse Delta	SQ1, SQ2, SQ3
Farmer 2	Large-scale farmer in the Zuid-Hollandse Delta	SQ1, SQ2, SQ3
Farmer 3	Medium-scale farmer in the Zuid-Hollandse Delta	SQ1, SQ2, SQ3
Volunteer/Member	Volunteer and member of the cooperative farm (Farmer 1)	SQ1
Policymaker 1	Works at LEADER, a European Union subsidy programme	SQ3
Policymaker 2	Works at a municipality in the Zuid-Hollandse Delta	SQ3
Waterboard member	Works at the waterboard in Zuid-Hollandse Delta (Zuid Hollandse Eilanden)	SQ3

The recruitment strategy for the interviewees was informed by the stakeholder analysis. This analysis identified RA farmers as a central stakeholder group, as they are the primary actors implementing regenerative practices in the field. To capture a broader understanding of the value landscape, multiple farmers (who were also observed in the participant observations) were interviewed alongside one volunteer involved in regenerative farming practices at Farm 1. These interviews supplement the findings from the discourse analysis and observations by asking farmers and volunteers explicitly about their values (SQ1). The farmer interviews also provided insights into the value conflicts that farmers experience by asking about barriers they face (SQ2) and into how institutional and technological conditions shape and interact with the value landscape of regenerative agriculture from the perspective of the farmer (SQ3).

The waterboard member was included because of its relevance to SQ3, particularly in understanding how the technological water system interacts with regenerative agriculture. Two policymakers were

included to explore how institutional conditions mediate the value landscape of RA (SQ3). In practice, outreach to policymakers resulted in limited response. Therefore, the institutional perspective is represented by a municipal official and a representative of LEADER, a European subsidy programme. Although neither actor holds a dominant position in agricultural governance, both interviews provided insights into the relationship between policy and regenerative agricultural practices (and its value landscape). In Section 4.3, a more detailed description of how the stakeholder analysis informed the selection of stakeholders is given.

5.4.3 Procedure

All formal interviews were conducted in a semi-structured format, with an emphasis on allowing interviewees to speak freely and elaborate on their own topics. I used a set of guiding questions, Appendix C.1, as guidance and pursued topics introduced by the interviewee where relevant. The formal interviews were recorded via Microsoft Teams and transcribed using the software Amberscript. After transcription, all recordings were deleted. Transcriptions were reviewed, corrected and anonymised by the researcher. The transcriptions are in Dutch, and quotes have been translated by the author. The transcripts are stored securely and are accessible to the supervisory team.

In addition to the formal interviews, a number of conversations took place in the field, conducted informally during work on the farm. These in-situ conversations were not recorded and were instead written up from memory as soon as possible after they occurred. These exchanges are part of the observational notes. This format was sometimes the only option, as the heavy demands of farm work did not always allow time for a formal interview.

Two interviewees required special adaptations. In the case of Farmer 3, several in-situ conversations were supplemented by a series of voice messages sent by the farmer in response to follow-up questions. This was his preferred mode of interviewing. These voice messages were transcribed as an interview. In the case of the fourth farmer, only an in-field conversation was possible, which has been included in the observational notes.

The interview transcripts were analysed and interpreted by the researcher, as explained further in Section 5.7.

5.4.4 Reflection on the method

This method was well-suited to the purpose of extracting values, perspectives, and barriers from different stakeholders. The semi-structured interview format especially proved well-suited to the aims of this method. Allowing interviewees to speak freely and introduce their own considerations produced richer and more nuanced responses than a more rigid format would likely have yielded.

With respect to analysis, a formal thematic analysis with systematic coding would have strengthened the rigour and transparency of the interpretive process. Given the time constraints of this research, this was not feasible. This introduces a degree of subjectivity that a more structured coding procedure would have reduced.

5.5 Autoethnographic research

In addition to recording empirical observations and conversations during the farm visits, I also observed myself throughout the fieldwork. This section introduces autoethnographic research as a method and explains how it was applied in this study.

5.5.1 Introducing autoethnographic research

Autoethnography is a research method that uses the personal experience of the researcher as the research object (Xue et al., 2026). To use autoethnography appropriately, the researcher must first become a member of the group being studied, personally experiencing its everyday realities. This can be achieved through two strategies: an opportunistic strategy, in which the researcher selects a topic that matches their existing sociocultural role, or a converting strategy, in which the researcher

immerses themselves in a new sociocultural role for the purposes of the research (Xue et al., 2026). This study follows the converting strategy: I entered the farms as an outsider and participated in the daily work of regenerative farming in order to gain an understanding of how it is experienced in practice.

5.5.2 Justification and purpose of the method

This research sits at the intersection of multiple knowledge flows. The literature review and discourse analysis bring knowledge from the literature. The participatory observations and interviews with the farmers and the volunteer bring in the knowledge from farming practice. The interviews with the policymakers, the waterboard member and the analysis of the policy discourse bring institutional knowledge. Input from the supervisory team and the thesis lab bring interpretive context. All of these flows come together in me as the researcher, as visualised in Figure 5.3. My experience, interpretation, and positionality are thus very important for the research. Autoethnographic research puts this experience central.

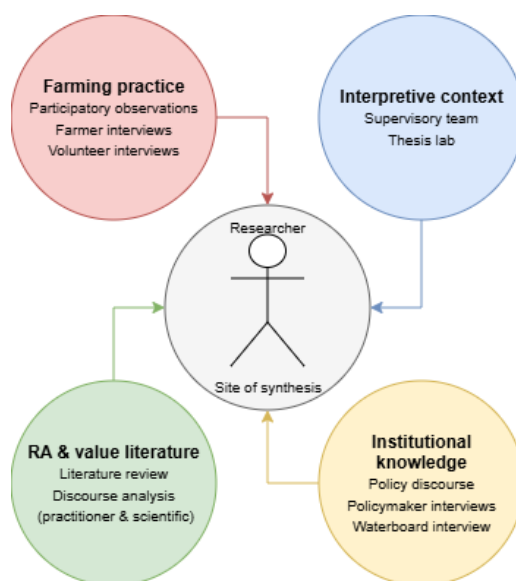


Figure 5.3: Knowledge flows converging in the researcher as site of synthesis.

Autoethnographic reflection contributed in three ways to this study. First, it grounds part of a result, a value conflict in Section 6.2. Second, it grounds a recommendation in Section 7.2. Third, it contributes to ethical and transparent research, by making my own worldview, experiences, doubts, and feelings explicit, as they have shaped this research. Research is never fully objective, so reflecting on your own experiences as a researcher is a way to be accountable about that.

5.5.3 Procedure

During and after each farm visit, I wrote reflective notes in a journal format, recording thoughts, feelings, memories, questions, descriptions of activities, inner experiences, and observations about my relationships with the farmers, volunteers, and the land. I also reflected on ethical dilemmas that arose during the fieldwork. I sat down at the end of each day and wrote for approximately an hour, and, if needed, would take inspiration from the following guiding questions:

- What happened today that stood out to me, and why?
- Did I experience any tensions during the day?
- How did I relate to the land, animals, or plants?
- How did I relate to others, such as the farmer and the volunteers? When did I feel connection or distance?
- What emotions or bodily sensations did I notice, and in response to what?

- What choices did I make, and what influenced those choices?

The outcome of this process is a set of autoethnographic reflections, written in a reflective journal style. These reflections are stored securely and accessible to the supervisory team.

5.5.4 Reflection on the method

The reflections produced through this method offer interesting insight into my experience of the fieldwork. However, several limitations must be acknowledged.

First, autoethnography is most powerful when the researcher is either already part of the group being studied or participates in it over an extended period. I am not a regenerative farmer, and my time on the farms was brief. The reflections, therefore, say little about the value landscape of regenerative farming as such, and more about my very short immersion in that world. The impact of this method on the findings of the research is therefore limited, and it was not used as a primary source of data. It fits better in research where the researcher takes part in a practice for a long time, such as the work of O'Connor et al. (2025).

Second, autoethnography is heavily reliant on the honesty, willingness, and integrity of the researcher to self-disclose (Méndez-López, 2014). This is an inherent limitation of the method. It was mitigated here by the fact that the autoethnographic data plays a supporting rather than a central role in this study, limiting the consequences of any selective disclosure.

Third, the method requires the researcher to transition continuously between different roles, between participant and observer and between feeling and analysing. This is cognitively and emotionally demanding for the researcher. Furthermore, this method puts the researcher in a vulnerable position, as it makes personal experiences and emotions public. In response to this, the full reflective journal has not been included in the research.

5.6 Operationalisation of theoretical concepts

The core theoretical concepts used in this research, moral value, practice, and value conflict, were operationalised differently across the methods used. To be more explicit about how these important concepts were brought to practice, Table 5.2 provides an overview of this.

Norms are not included in the table, because norms were not systematically operationalised across the methods. They were only made explicit in the analysis of value conflicts in Section 6.2, where I traced the chain from value to norm to practice by finding the implicit rules that connected the two: what a farmer ought to do, according to a given value, and how that prescription translated into a concrete farming decision.

Table 5.2: Operationalisation of theoretical concepts across methods

Concept	Discourse analysis	Observations	Interviews
Moral value	Identified when language expressed a normative goal or ideal framed as either a promise or a concern. The model was given the following definition: 'A priority, ideal, or purpose that guides how actors judge what is good, desirable, important, or acceptable. Values express goals or states of affairs that are worth striving for. Values are normative because they indicate what should be pursued.'	Identified when people on the farm (including the farmer, employees, or volunteers) expressed something they found important or a preference, or described a goal during conversation or work. Also identified when a practice was observed that required deliberate investment of time, money, or effort and could therefore be interpreted as the expression of an underlying normative commitment.	Identified through questions about what interviewees found important, what motivated them, what they were proud of, what felt right or wrong in their work, and what they were working towards, as well as through statements about goals, frustrations, and priorities.
Practice	Extracted concrete actions or behaviours that follow a norm in order to realise a value. The results were not used in the final analysis.	Observed as the activities carried out on the farm, interpreted in relation to the values they appeared to express.	Identified when farmers described specific actions they take or avoid in connection to their values or motivations.
Value conflict	Not extracted. The discourse analysis was used to identify which values were present across the discourses, not to identify where they conflicted.	Identified when a tension or obstacle was observed or described on the farm, for example, when a practice clearly served one value while undermining another.	Identified when interviewees described barriers, frustrations, or trade-offs that pointed to two values prescribing incompatible courses of action, or when they explained a choice between competing priorities that could not both be honoured simultaneously.

5.7 From data to findings: analysis of the data

After data collection through the methods described above, the data were analysed. To integrate all sources of data into the final findings, I returned to the three sub-research questions as the organising structure. The analysis was conducted manually and iteratively, without the use of formal qualitative analysis software such as Atlas.ti. I followed a broadly inductive approach, with themes emerging through close reading of the material and reflection at each stage, rather than through a fixed procedure such as thematic analysis. To still be transparent, the procedure for each research question is briefly explained below. Each results section also contains a short description of the methods and data used to answer that sub-question.

SQ1

I first interpreted the discourse analysis results, identifying which values emerged across the practitioner and scientific corpora and how they were framed. An initial framework was drawn up from the discourse analysis, reflecting my first interpretation of the value landscape. I then worked through all observation notes, farmer interviews and the volunteer interview inductively, writing down the values I observed emerging at each farm. The value framework was adapted per farm during the empirical analysis, producing four farm-specific value portraits. Third, the overarching framework was constructed by taking the sum of all values across the four farm portraits. Almost all values from the

discourse analysis resurfaced empirically, and the empirical work primarily served to refine, ground, and in some cases restructure the initial framework. This is explained in more detail in Section 6.1.3.

SQ2

From the final value framework, I first studied which values might logically pull in different directions. With this in mind, I worked through all interviews with the farmers and observations again, writing down the moments where farmers described obstacles, trade-offs, or frustrations, pointing to competing values. I then related these tensions back to the framework, identifying conflicts where two values clearly prescribed incompatible courses of action and where this incompatibility was grounded in empirical evidence.

SQ3

I turned to the policy discourse analysis, examining which values emerged and how these compared with the RA discourses. I then worked through the policymaker interviews inductively, looking specifically for how institutional conditions were described as enabling or constraining regenerative practice, and supplemented these findings with perspectives from the farmer interviews and observations. For the technological dimension, I worked through the waterboard member interview, looking for how the water system interacted with farming values and practices, again supplemented by farmer observations and interviews.

As can be observed from the approach above, the research process was iterative. Each method built on what came before and sometimes challenged earlier assumptions. Moving from the discourse analysis into the field, and then from the farms into the institutional and technological domain, continuously refined my understanding of the phenomenon under study. Assumptions I held at one stage were tested, and sometimes revised, at the next.

5.8 Ethical procedures

Since this study involved human participants through interviews, observations, and autoethnographic research, ethical procedures were implemented to ensure their safety. This research was carried out in line with Delft University of Technology's ethical standards, adhering to the TU Delft Human Research Ethics Policy. Ethical approval was obtained from the TU Delft Human Research Ethics Committee, under application number 6510. This approval covered the data management plan, the informed consent forms, and a risk assessment. The most important procedures implemented are summarised below.

Informed consent Separate informed consent forms were developed for interviews and for the observations. These forms explain the research purpose, data storage and anonymisation procedures, how participation is voluntary, and the right to withdraw, and asked participants to explicitly consent to anonymous citation of their contributions and to long-term archiving of anonymised data in the TU Delft repository. All participants were asked to sign the relevant form prior to participation. Signed forms are stored securely and are accessible to the researcher upon request.

Ongoing informed consent Beyond the formal consent forms, all individuals with whom I came into contact during the fieldwork were informed of my role as a researcher and the purpose of the study. This ensured that participation remained informed and voluntary throughout all observations.

Transparency At the start of each interaction, I explained my role and research aims clearly. Participants who wished to review the materials about them were offered access to their interview transcripts and observation notes in which they appeared.

Data management All data were anonymised prior to analysis, with identifying information removed or replaced with a cover word, e.g. Name 1. All materials are stored on TU Delft OneDrive, in accordance with the university's data management requirements.

Photography No photographs of participants or farm sites were taken nor used without explicit prior consent.

Reciprocity Participating in the daily work of the farms, rather than merely observing, was a deliberate ethical choice. Contributing labour was a way of giving back to the farmers and volunteers whose time and experiences formed input to this research.

Autoethnographic reflections. The autoethnographic reflections also contain reflections on ethical dilemmas that I encountered during the fieldwork. These have been documented as part of the commitment to honest research practice.

6 | Results



This chapter presents the results of this research, structured around the three sub-questions of the research. Each section draws on a different combination of methods. The first section, addressing SQ1, combines the results from the discourse analysis of practitioner and scientific literature with insights from the participant observations and interviews conducted at four farms in the Zuid-Hollandse Delta to create a value framework of RA in the ZH Delta. This reveals a broad and plural value landscape, with care for nature, or more specifically, care for soil, as its central value and a wide range of values around justice, community, learning, and economic viability surrounding it. The second section, addressing SQ2, draws on the observations and interviews and analyses the previously made value framework to identify two internal value conflicts: one between economic viability and a wide set of regenerative values, and one between intergenerational and intragenerational justice. The third section, addressing SQ3, integrates the discourse analysis of agricultural policy documents with interviews with the farmers, policymakers, and a waterboard member. The findings suggest that both the institutional and technological conditions of the Delta mediate the value landscape of regenerative agriculture. At the institutional level, this occurs through a failure to recognise the full plurality of RA in policy, a structural distance between policymakers and farmers, and an economic system organised around productivity that is misaligned with the plural value landscape of RA. At the technological level, the technofix logic and centralised control embedded in the hydraulic infrastructure can potentially conflict with regenerative values such as autonomy and care for the soil, although this tension remains largely latent for most farmers. Moreover, a shared instrumental care for the soil between the waterboard and regenerative farmers has not yet been translated into shared practice.

6.1 The value landscape of regenerative agriculture in the Zuid-Hollandse Delta

This section answers the first sub-research question:

SQ1: What values can be associated with regenerative agriculture, and specifically in the Zuid-Hollandse Delta?

To do so, I present findings from the discourse analysis, which give insight into values within regenerative agriculture in general, from Dutch practitioners' outings and in RA literature. I then contextualise these findings and focus on the Zuid-Hollandse Delta by presenting the results of the observations and interviews. Finally, these are integrated to present the full moral value landscape of RA in the Zuid-Hollandse Delta.

6.1.1 Values in practitioner and scientific literature discourses

This section presents the results of the discourse analysis on Dutch practitioner documents and scientific literature. It offers a glance into the normative content of these two discourses, showing which values are touched upon and how prominently they are present. These results should be interpreted as indicative of broader patterns rather than as definitive conclusions. Value prevalence in all analyses is expressed as the proportion of chunks containing a given value relative to the total

number of chunks in that discourse. For each extracted value, one of two contexts is attributed: whether the value is articulated within a promise context, reflecting a positive expectation or aspiration, or a concern context, reflecting a tension, risk, or critical framing.

Practitioners

Figure 6.1 presents the value prevalence for the practitioner discourse, across both the promise and concern context. The value landscape that emerges is very plural, with a broad range of values appearing across the corpus. Below, a few of the most often occurring values are highlighted.

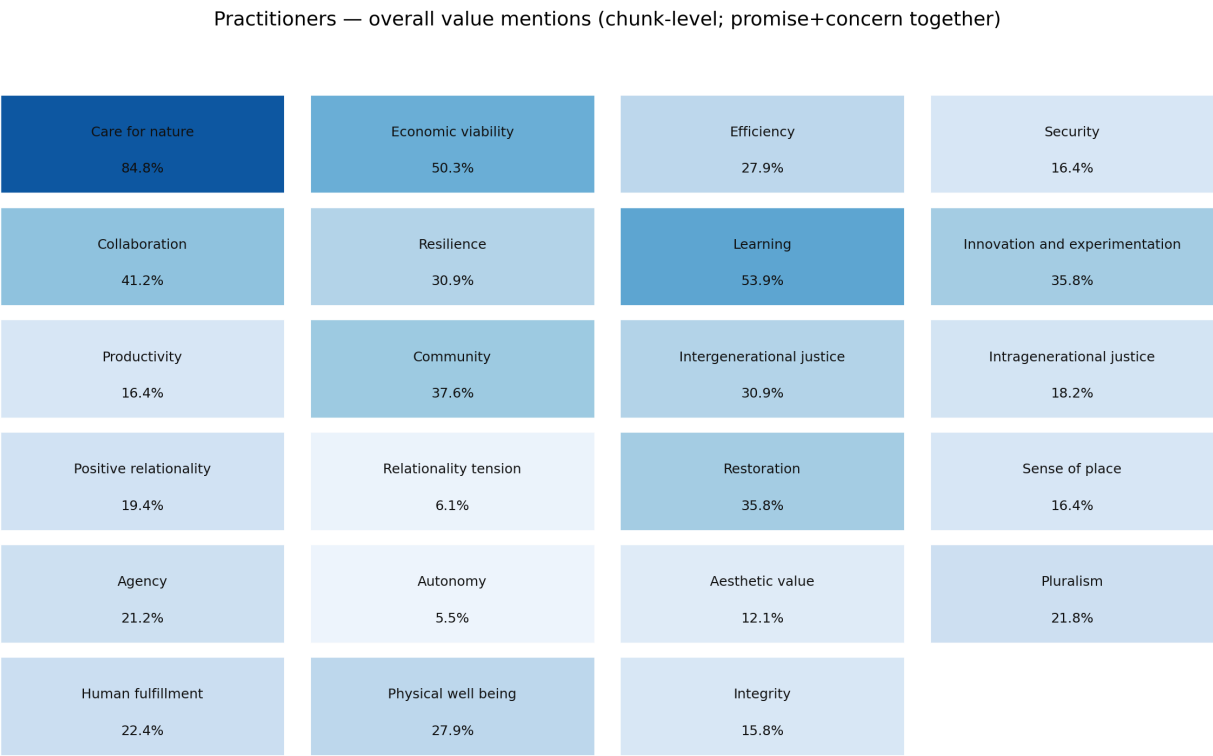


Figure 6.1: Value appearance (%) of the practitioner’s discourse for both contexts.

Care for nature is by far the most prominent value, appearing in almost all chunks. Closely linked to this is resilience, understood as the ability of agricultural systems to learn from and work with natural processes in order to remain adaptive over time. Together, these values suggest that within RA, there is care about protecting nature and actively engaging with it.

Then there is a cluster of values oriented towards collective responsibility and learning that shows up prominently, including collaboration, learning, community, and innovation and experimentation. This suggests that practitioners place strong emphasis on collective knowledge-building and experimentation as part of the regenerative transition.

Human wellbeing is also present in the discourse, expressed through both human fulfilment (mental/emotional wellbeing) and physical wellbeing. This links to two justice-oriented values that also emerge strongly: restoration, which can be interpreted as restorative justice (undoing harms from the past), and intergenerational justice, pointing to a responsibility towards future generations. These values position human well-being as both a past and future concern.

Furthermore, economic viability occurs frequently. This suggests that practitioners do not frame regenerative agriculture in purely ecological or normative phrasings, but also care about the financial security of the farm. It also reflects a major issue that RA is currently facing: how to make it a viable business case.

Concerns and promises A breakdown of value appearance by context is presented in a table in Appendix B.11.1. Distinguishing between promise and concern contexts allowed me to check whether any big biases occur in how values are framed across the discourse. The practitioner discourse is mostly oriented towards promises, reflecting an overall optimistic and aspirational framing of RA. Two values are also frequently mentioned in a concern context. First, care for nature, suggesting that practitioners are not only motivated by a positive vision for nature but also by a sense of urgency about its current degraded state. Second, economic viability, indicating that practitioners are aware of the challenges of making the practice economically sustainable.

Scientific literature

Figure 6.2 presents the value appearance at chunk level for the scientific literature discourse across both contexts. Overall, the scientific discourse is much less value-laden than the practitioner discourse. This is consistent with the tendency of academic literature to adopt a neutral or objective framing rather than explicitly normative language. Below, some highlights are discussed.

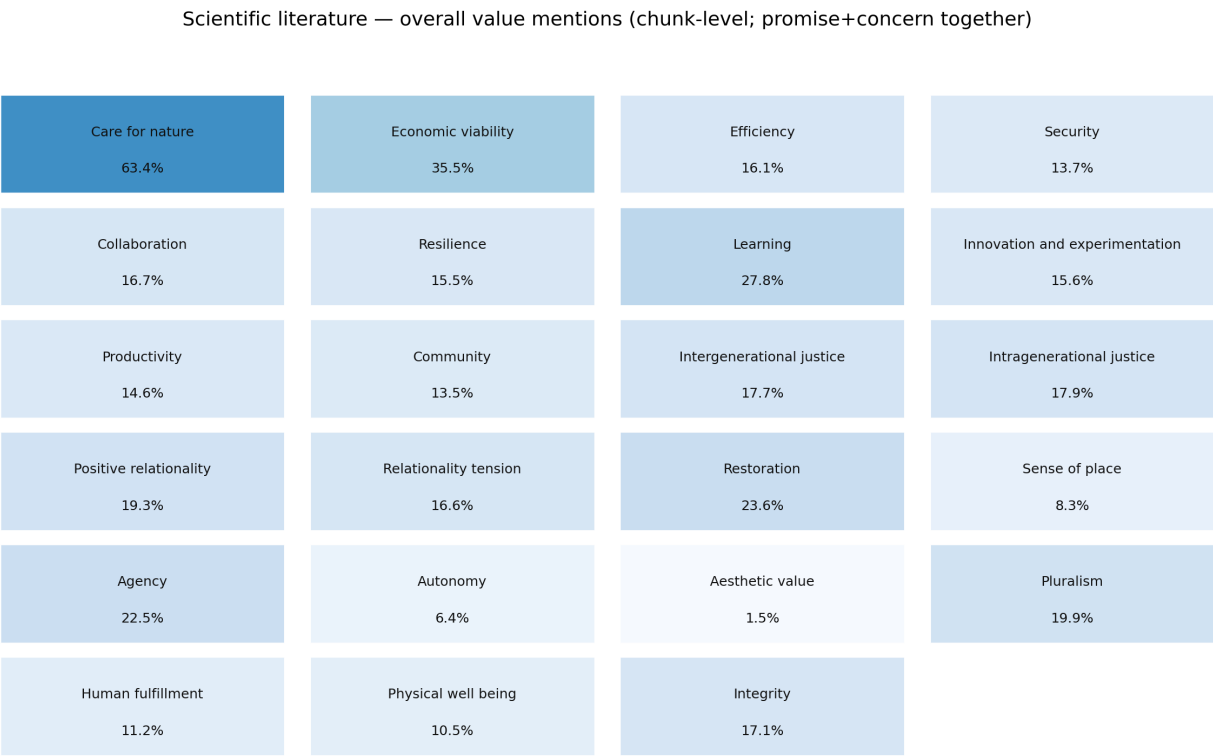


Figure 6.2: Value appearance (%) of the scientific discourse for both contexts.

Care for nature again emerges as the most prominent value, which aligns with the ecological orientation of a lot of RA research. Economic viability also shows up strongly, reflecting the body of scientific work concerned with the financial feasibility of regenerative farming. A cluster of justice and knowledge-oriented values is also present, including learning, intergenerational justice, intragenerational justice, and restoration. This suggests that the scientific discourse does engage with broader normative questions around equity and responsibility, even if less explicitly than practitioners. Integrity appears with some frequency but is not further interpreted here, as its occurrence is largely attributable to references to research integrity rather than reflecting a value within RA framings.

Framing and distribution checks Two checks were performed to examine whether framing biases or subcategory dominance skew the overall results. First, value appearance was broken down by context (promise or concern) to check whether major framing biases occur, as presented in Appendix B.11.2. The scientific discourse is slightly more balanced between promise and concern contexts than the

practitioner discourse, though promises remain dominant overall. Integrity appears more frequently as a concern than a promise, but, as noted above, it is not further interpreted, given that it mostly refers to methodological integrity.

Second, during the collection of documents, the documents were categorised into subcategories, see Section 5.2.2. The value appearance was broken down per subcategory to check whether any single subgroup disproportionately drives the overall results, as presented in Figure B.1 in Appendix B.11.2. The patterns are generally well-spread, with one exception: economic viability is concentrated in the coastal and reports subcategories, which is not surprising given that the reports were produced by the economic department of WUR.

6.1.2 Values in practice in the Zuid-Hollandse Delta: empirical findings

Having explored the broader value landscape of RA as it appears in RA discourses, I now turn to the specific context of the Zuid-Hollandse Delta. The following sections introduce the value landscape as it emerged from the interviews and participant observations conducted at the four farms. It draws on the lived experiences and perspectives of the farmers and other people encountered in the field, grounding the values identified in texts in the realities of regenerative practice in this region. Moral values can be expressed in many ways: through explicit statements, through choices, and through practice. The empirical analysis, therefore, combines what farmers articulated verbally (in conversation) with what was observed and experienced in the field. The findings are presented per farm.



Scan the QR code to listen to sounds recorded during the farm visits.

These recordings were made by the author.

Farm 1

Farm 1 is a small-scale cooperative farm where members pay a contribution in exchange for a share of the harvest and the possibility to volunteer, also see Section 5.3.3. Figure 6.3 gives an impression of the days at the farm.



Figure 6.3: Impressions from Farm 1, photos taken during the field work by the author, with explicit consent from the farmer.

The value landscape at this farm was rich. Human wellbeing emerged as a central theme across two dimensions. First, emotional and mental wellbeing was expressed through the following four values:

- Community was strongly present: volunteers described a sense of belonging and connection (Observations Farm 1), and the farmer actively cultivates an open culture among members (Interview Farmer 1).
- The connection to food also emerged as a value, with members expressing appreciation for knowing where their food came from and for eating what the land provides (Observations Farm 1).
- Aesthetic value was present in volunteers' enjoyment of the physical environment of the farm (Observations Farm 1).
- Purpose and fulfilment emerged from the volunteer interview, with the members explaining that volunteering here provided a place to contribute something meaningful after retirement (Interview Member/Volunteer).

Second, physical wellbeing was articulated through a concern for healthy food, with members and the farmer expressing a preference for food grown without chemical inputs (Interview Farmer 1; Observations Farm 1).

Care for nature appeared in two forms. The farmer expressed an intrinsic valuation of nature, explaining that he considered humans to be part of nature rather than separate from it, and describing the farm as closer to a nature conservation project than a food production site (Interview Farmer 1). Alongside this, an instrumental care for the soil was shown in practice, with the farmer investing in soil health through composting, avoiding tillage and chemical inputs (Interview Farmer 1; Observations Farm 1).

The value 'innovation and experimentation' was apparent in the farmer's approach to pest control, crop combinations, and soil management, which he described as a process of discovery and continuous learning (Observations Farm 1). This was closely linked to broader values of learning and inspiration, driven by the farmer's personal curiosity and desire to show others what is possible: *"I wanted to show how things can be done better, and to make people enthusiastic about it"* (Interview Farmer 1). The value 'collaboration' is in line with this, through knowledge exchange with other farmers in the Farming Cooperation network (Interview Farmer 1).

Finally, intragenerational justice emerged as a concern. He mentioned he thinks it is very important that his way of farming becomes more inclusive. Pointing to the current inaccessibility of regenerative food for lower-income groups as a concern he was trying to address by working towards lower membership contributions (Interview Farmer 1).

These results have been summarised in a value framework, as presented in Figure 6.4.

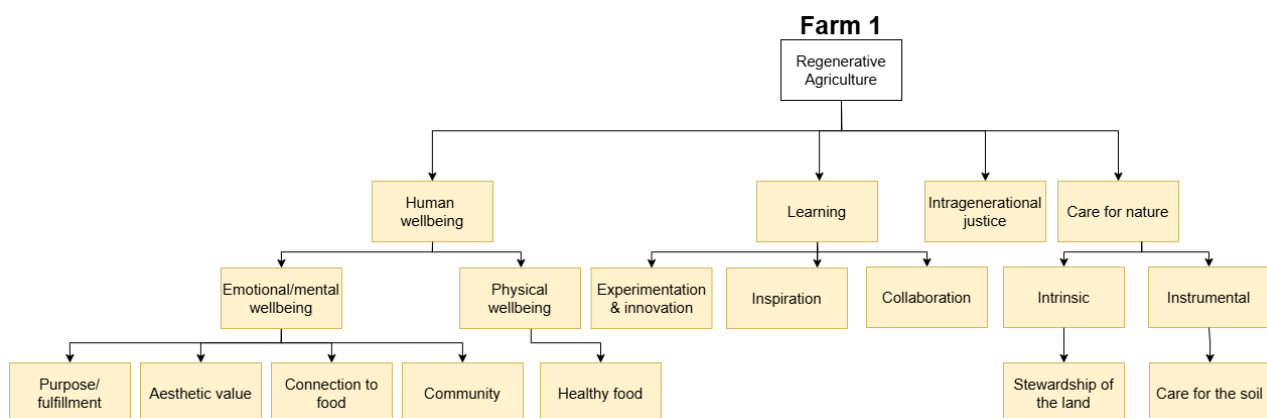


Figure 6.4: Values identified at Farm 1 organised in a value framework.

Farm 2

Farm 2 is a large-scale family farm of approximately 550 hectares, also see Section 5.3.3. Figure 6.5 presents some photos taken during the fieldwork at Farm 2.



Figure 6.5: Impressions from Farm 2, photos taken during the field work by the author, with explicit consent of the farmer.

The value landscape at this farm has one very distinct feature: economic viability functioned as the primary value, to which all others were subordinate. The farmer was explicit about this: *“I need to earn something from my farm, just like everyone does. I am not a philanthropic institution.”* (Interview Farmer 2). Regenerative practices were pursued due to increasing pest pressure and the gradual restriction of chemical inputs (Observations Farm 2; Interview Farmer 2). Participants at the workshop echoed this perspective, stating that most farmers would not switch without a clear business case, and that it takes a lot of courage to step away from conventional methods without financial security (Observations Farm 2).

Within this economically oriented frame, care for nature was present in an instrumental form, focused on soil health. The farmer defined regenerative agriculture as ensuring optimal life in the soil so that it can maximally support the plant, making it less susceptible to fungi and insects (Interview Farmer 2). This instrumental look on nature was consistent throughout: nature was valued insofar as it contributed to crop resilience and business viability, rather than for its own sake (Observations Farm 2; Interview Farmer 2).

Autonomy also emerged as a value, expressed as the desire to become independent from external chemical inputs. The farmer framed this as a core motivation: *“I want to be less dependent on external input”* (Interview Farmer 2). This was reinforced by frustration with policy frameworks that constrained his practices, such as subsidy rules that mandated the use of green manure varieties suboptimal for his soil (Observations Farm 2).

Finally, innovation and experimentation were strongly present, both at the farm and at the workshop. The farmer had developed his own plant extract mixture to boost crops before planting and was running experiments with different compost tea compositions (Observations Farm 2). The values identified at Farm 2 are brought together in the value framework presented in Figure 6.6.

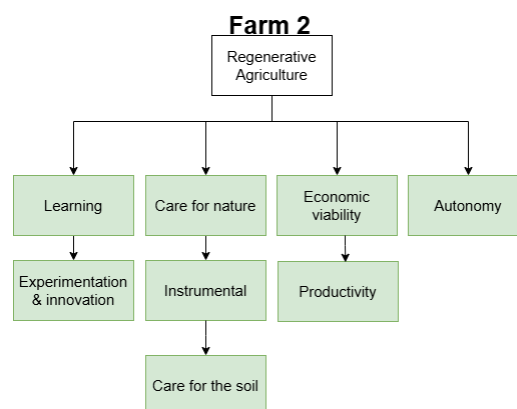


Figure 6.6: Values identified at Farm 2 organised in a value framework.

Farm 3

Farm 3 is a medium-scale family farm of approximately 50 hectares with a tiny house community on the land, also see Section 5.3.3. Impressions from the fieldwork at Farm 3 are presented in Figure 6.7.



Figure 6.7: Impressions from Farm 3, photos taken during the field work by the author, with explicit consent of the farmer.

Similar to Farm 1, human wellbeing emerged as a value across two dimensions. In terms of emotional and mental wellbeing there were 3 values that can be attributed to this:

- Community was central to the farm's identity. The farmer has built a tiny house community on the property, motivated by his vision of reconnecting people with the land and with each other (Observations Farm 3).
- Aesthetic value was also present: the farmer spoke enthusiastically about creating an attractive and diverse landscape, and saw beauty as an intrinsic part of what the farm should offer (Observations Farm 3).
- Purpose and fulfilment were shown in both the farmer and those around him. Employees and volunteers described enjoying the physical, outdoor nature of the work, and one employee in their pension age had chosen to stay simply because they loved the place (Observations Farm 3).

Physical wellbeing was also present, with the farmer explicitly connecting his transition away from conventional practices to concerns about what was being produced: *"I was producing around 200,000 kilos of sugar at some point That is simply not good for society"* (Interview Farmer 3).

Care for nature appeared in all three forms. Intrinsically, the farmer expressed a deep sense of stewardship of the land rooted in his personal conviction, describing a responsibility to take care of what had been entrusted to him (Observations Farm 3). Instrumentally, soil health was the foundation of all his practices, from strip cropping and shallow cultivation to permanent driving pathways and green manure (Observations Farm 3). Relationally, the farmer expressed a strong and personal connection to his land, knowing every corner of it intimately (Interview Farmer 3). He reflected that this kind of connection becomes increasingly difficult to maintain beyond a certain scale, suggesting that his medium-sized farm allowed for a depth of relationship with the land that larger operations would not permit (Interview Farmer 3).

Innovation and experimentation were also present. The farmer had adapted all of his machines manually, developed his own conveyor belt, built his own wide strip cropping system after narrow strips proved too complex, and was piloting an autonomous weeding robot (Observations Farm 3). This experimental orientation can again be linked to a value of learning: driven by a desire to discover what works and to share this knowledge with others. He saw himself explicitly as a pioneer with a

responsibility to inspire: *“It is a kind of calling to be a signpost, a sort of prophet”* (Interview Farmer 3). Intergenerational justice emerged as another value. One of his stated goals for the farm was explicitly to create a business for future generations, and his transition was framed as a response to an unsustainable inheritance being passed on (Observations Farm 3). Resilience was closely tied to this, as the farmer sought to build a crop system that could withstand climate variability over the long term (Observations Farm 3).

Economic viability was described as his biggest obstacle, so in a concern context. Initial investments in adapting machinery alone cost between 700,000 and 800,000 euros, and the transition period brings lower yields, high labour costs, and significant financial insecurity (Observations Farm 3). He had to sell part of his land to cover costs and acknowledged being on the verge of quitting at times.

Finally, autonomy was present as a value. The farmer described how conventional agriculture had left him entirely dependent on external advisors telling him what to spray, saying: *“It felt like I had lost autonomy over my own land”* (Observations Farm 3). Regaining control over his own practices was an important driver of his regenerative transition.

An overview of the values that emerged at Farm 3 is presented in the value framework in Figure 6.8.

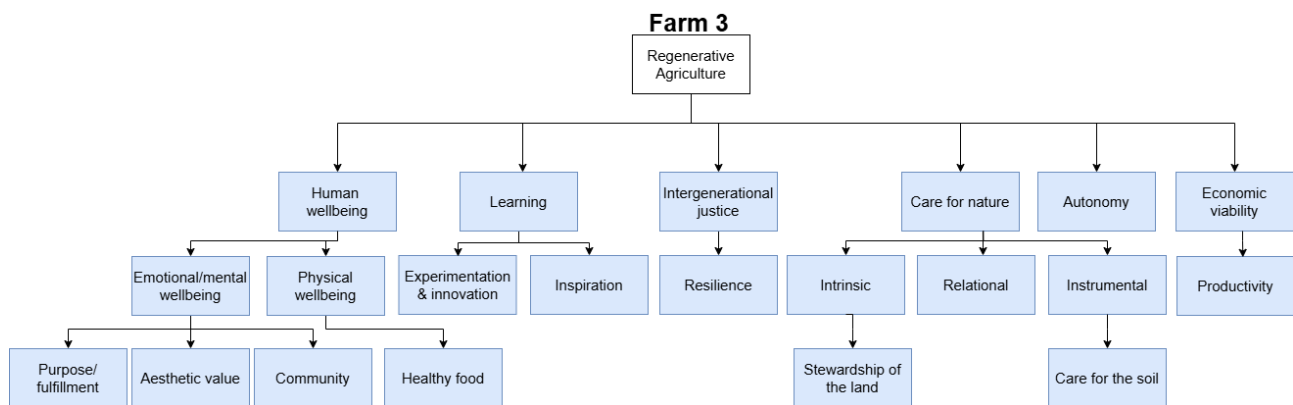


Figure 6.8: Values identified at Farm 3 organised in a value framework.

Farm 4

Farm 4 is a small-scale farm of approximately 7 acres with an active volunteering community, also see Section 5.3.3. It should be noted that this farm is located outside the geographical scope of the Zuid-Hollandse Delta, these findings should therefore be interpreted as supportive. Figure 6.9 presents impressions from the fieldwork at Farm 4.

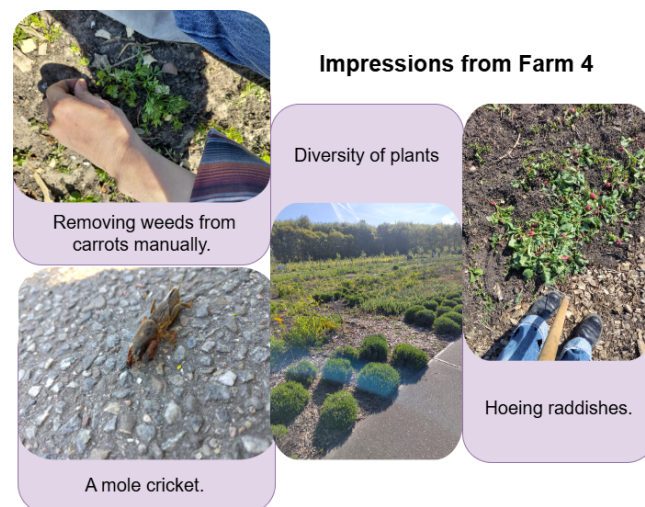


Figure 6.9: Impressions from Farm 4, photos taken during the field work by the author, with explicit consent of the farmer.

Human wellbeing was again a prominent value at this farm across two dimensions. In terms of emotional and mental wellbeing there were 3 values that can be attributed to this:

- Community was strongly present among the volunteers, who described a warm and connected atmosphere in which people easily shared personal stories while working together with their hands (Observations Farm 4).
- Aesthetic value was important in the farmer's motivation: he wanted to create a place where people could enjoy life, good food, and the beauty of the surroundings (Observations Farm 4).
- Purpose and fulfilment were expressed by volunteers, one of whom explained that he had come to the farm after retirement because he felt the need to contribute something good to the world, describing a sense of zen in the work and joy from the physical connection with the soil (Observations Farm 4).

Physical wellbeing was also present, with healthy food production as an explicit goal of the farm (Observations Farm 4).

Care for nature appeared in three forms. Intrinsically, volunteers expressed genuine concern for nature, with one volunteer noting how many wild bees were present on the farm as a positive sign, and another sharing how she had begun saving worms while shovelling (Observations Farm 4). Instrumentally, the farmer invested in soil health through compost and compost tea, minimized soil disturbance and avoidance of any chemical input (Observations Farm 4). Relationally, volunteers described a feeling of connection to nature, with one explaining how a sense of relationality with both people and nature was at the heart of everything that happened at the farm (Observations Farm 4).

Innovation and experimentation were present in the farmer's approach, who created room for experimentation on the farm while trying to balance this with existing knowledge and experience (Observations Farm 4). Learning was also visible among the volunteers, who shared how much they were learning from each other and from the farmer about gardening, plants, and nature (Observations Farm 4).

A sense of equality across social backgrounds was articulated clearly by one volunteer: *"each of the people working here have a different background in terms of jobs, but when we come here, we are just two people looking at a plant"* (Observations Farm 4). The farm thus functioned as a space where social differences dissolved, indicating intragenerational justice.

Finally, economic viability emerged as a concern. The farmer depends on multiple revenue streams, low-paid employees, and a large volunteer community to keep the farm financially viable. He shared that managing so many different businesses at the same time placed considerable pressure on him (Observations Farm 4). The value framework in Figure 6.10 captures the values that came forward at Farm 4.

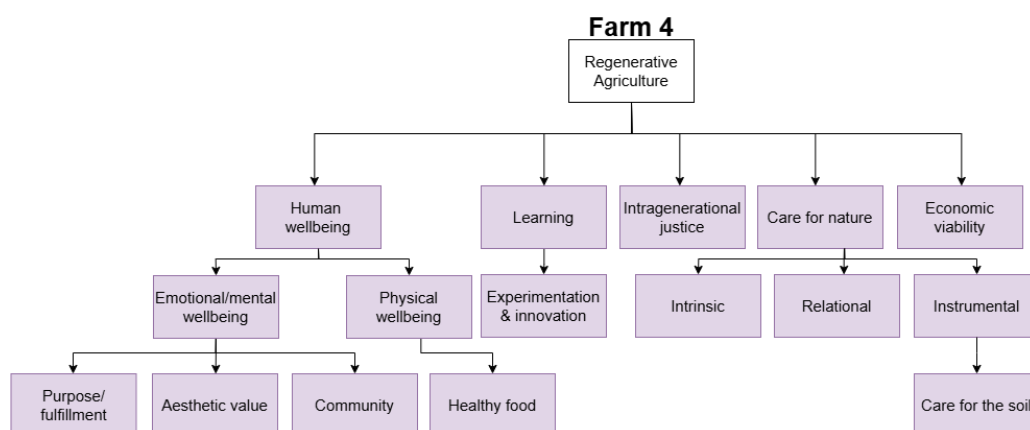


Figure 6.10: Values identified at Farm 4 organised in a value framework.

6.1.3 Final value framework

Drawing on the combined findings of the discourse analysis and the empirical fieldwork, the overarching moral value framework for regenerative agriculture in the Zuid-Hollandse Delta has been constructed, presented as a value tree in Figure 6.11. The framework organises the values and their underlying sub-values. The framework was constructed in three steps. First, an initial value framework was drawn up based on the discourse analysis, capturing the values that emerged across the practitioner and scientific corpora. Second, this framework was adapted per farm during the empirical analysis, producing four farm-specific value portraits (Figure 6.12), each reflecting the values observed at that site. Third, the final value framework of RA in the Zuid-Hollandse Delta was constructed by taking the sum of all values across the four farm portraits. This framework was also compared to the initial framework emerging from the discourse analysis. Almost all values identified in the discourse analysis resurfaced empirically, so few were lost in this process. Several methodological choices were made in this process, which are explained in the box below.

Note: methodological choices in constructing the framework

Reorganisation

Several values were reorganised into sub-values or merged where the empirical analysis revealed a hierarchical or overlapping relationship between them. First, restoration (reparative justice), while present in the discourse analysis, was placed as a sub-value under intergenerational justice, because it was not explicitly mentioned by the farmers, and because the moral concern with past harm can be understood as an expression of long-term responsibility towards future generations. Second, resilience emerged in the discourse analysis as a standalone value, but through the empirical analysis it became clear that it was expressed as a means of securing intergenerational justice (building farming systems that can withstand climate variability for future generations) and was therefore recategorised as a sub-value of intergenerational justice. Third, productivity and efficiency were merged under a single value of productivity, as in the agricultural context of this research, both values serve the same overarching norm of producing as much as possible at the lowest possible cost. Finally, autonomy is used to capture both agency and autonomy as they appeared in the discourse analysis, as it more precisely reflects the value at stake: independence from external control over farming decisions.

Inclusion

One value was added to the framework that only emerged very marginally from the discourse analysis: aesthetic value. It emerged in the observations and interviews across multiple farms, where farmers and volunteers described the beauty of the landscape and the farm environment as intrinsically meaningful.

Exclusion

Three values from the discourse analysis were not included in the final framework. Positive relationality and relationality tension were excluded because they describe a quality of relationships rather than a value in the normative sense used in this research: they are not goals worth pursuing in themselves but dimensions of how other values are enacted. Despite showing up in the discourse analysis, pluralism was excluded because it never emerged as an end goal at any farm. Rather, it functioned as a means to other ends, such as diversity in crops as a strategy for resilience or soil health, and was therefore better captured within those values.

Interpretation of the framework

The resulting framework reveals the broad and plural value landscape of RA in the Zuid-Hollandse Delta, encompassing values around care for nature, justice, knowledge, and economic viability. While the discourse analysis provided a general exploration of the normative commitments of regenerative agriculture as a movement, it is the empirical fieldwork that ultimately shaped the framework into a contextually situated portrait of what the value landscape looks like in the Zuid-Hollandse Delta. The empirical work did not reveal a fundamentally different set of values, but rather grounded and refined

the discourse-derived values in the specific practices, conditions, and worldviews encountered at the four farms. So, the empirical work revealed that each farm has its own version of this landscape. To show this, the value framework is differentiated into four value portraits, one per farm, presented in Figure 6.12.

Because many values that appeared in the discourse analysis are present in the value framework, it can also serve as a stepping stone for value analysis of regenerative agriculture in other contexts. However, empirical and local research is always needed to refine it to other contexts.

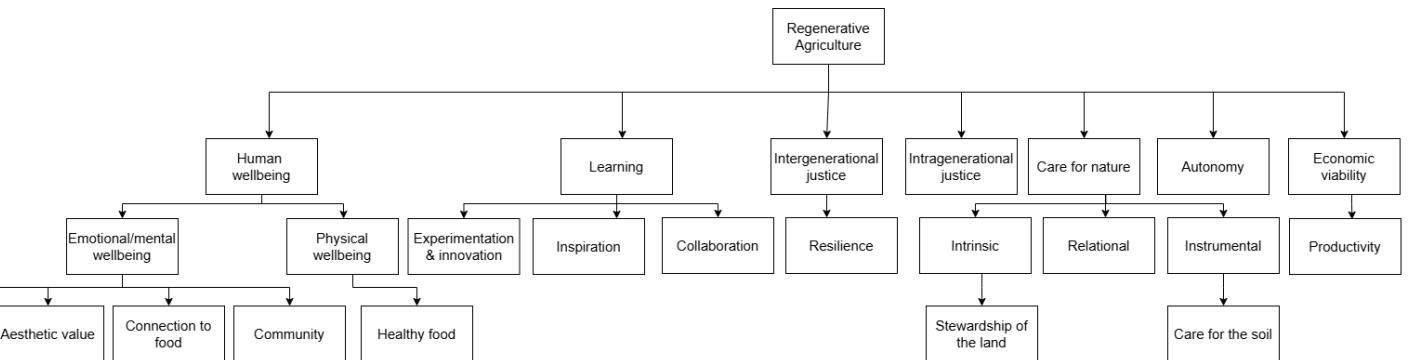


Figure 6.11: Moral value framework of regenerative agriculture in the Zuid-Hollandse Delta.

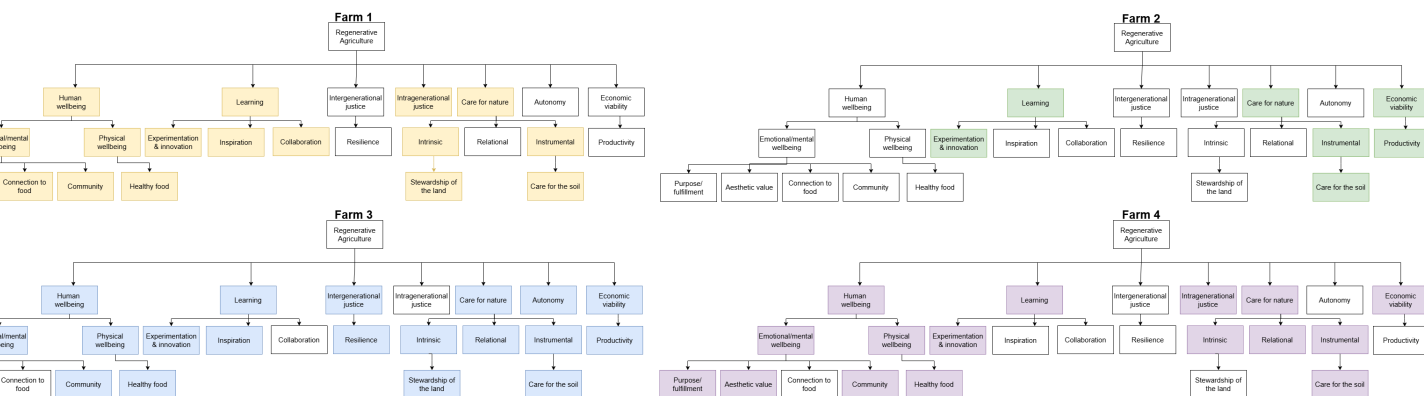


Figure 6.12: Differentiated moral value frameworks of regenerative agriculture for 4 farms in the Zuid-Hollandse Delta.

6.1.4 Synthesis

This section addressed the first sub-question: *what values can be associated with regenerative agriculture, and specifically in the Zuid-Hollandse Delta?*

The discourse analysis established that the value landscape of regenerative agriculture is broad, as many values showed up. Care for nature emerged as a central value, appearing prominently in both practitioner and scientific texts. Beyond this, values around collective responsibility and knowledge appeared, including collaboration, learning, community, and innovation and experimentation, alongside justice-oriented values such as intergenerational justice and restoration. Economic viability came up as a recurring concern in both discourses. Even at this general level, it already became clear that regenerative agriculture cannot be reduced to a single-value proposition but is a normatively complex practice.

Moving to the specific context of the Zuid-Hollandse Delta, the empirical fieldwork confirmed this plurality by showing how differently RA values are expressed across sites. The four farm portraits demonstrate that regenerative agriculture is a compound value constituted differently at each site, shaped by the scale of the farm, the worldview of the farmer, the business model, and the position within the food system. At Farm 1, human wellbeing and community were central, with

the cooperative model placing the social dimension of farming at the front. At Farm 2, economic viability was the dominant value, with all other values subordinate to it. At Farm 3, a deeply personal and intrinsic sense of stewardship drove the farmer, with a vision of the farm as a place for community, beauty, and intergenerational responsibility. At Farm 4, the farm functioned primarily as a community space, with human fulfilment and connection to nature central to its identity and purpose.

Despite these differences, two values were shared across all four farms, though not with equal weight. Care for the soil stood out as the most fundamental, as it was the foundation from which all regenerative practices flowed. Every farmer organised their practice around it. At Farm 1, the farmer invested heavily in composting and avoided tillage to build soil life (Observations Farm 1). At Farm 2, soil health was the explicit foundation of the regenerative approach, with the farmer defining regenerative agriculture as ensuring optimal life in the soil (Interview Farmer 2). At Farm 3, the farmer had restructured his entire machinery setup around minimising soil pressure and invested in shallow cultivation and green manure (Observations Farm 3). At Farm 4, the farmer used compost and compost tea, minimised soil disturbance, and avoided all chemical inputs (Observations Farm 4). This shared commitment reveals what care for nature, so prominent in the discourse analysis, means in regenerative practice in the Delta: a daily attentiveness to the living system beneath their feet. Learning was also shared across all farms, but in a different way. Not as a foundational commitment that structured the practice, but as an accompanying orientation that expressed itself differently at each site. At Farm 2 it appeared through experimentation and innovation in soil management and crop inputs (Observations Farm 2). At Farm 3 it was linked to a sense of pioneering responsibility and a desire to inspire others (Observations Farm 3). At Farms 1 and 4 it emerged more relationally, through informal knowledge exchange and collaboration. Learning is therefore an important dimension of regenerative farming, but one that plays a secondary and more variable role compared to care for the soil.

Note: Economic viability as a moral value

A brief clarification on the use of economic viability as a moral value is needed, as it may seem to concern personal financial interest rather than a goal worth pursuing for a higher notion. However, in the context of this research, economic viability is understood as the ability to sustain economic activity over time through stable income, financial health, and long-term livelihood security. Framed this way, it reflects that a farmer should be able to earn a dignified living from their work. This was articulated by one of the farmers as the most important motivation for engaging with RA, and it appeared as a recurring concern across both practitioner and scientific discourses. An alternative label, such as 'livelihood security' might have captured the meaning more precisely, or it could have been placed under human wellbeing. However, as it occurred so prominently and to allow easier analysis in the next chapters, it has been kept as a separate value.

6.2 Value conflicts within the value landscape

Conceptualising regenerative agriculture as a compound value, in which each underlying moral value prescribes a norm and a corresponding practice, means that when these prescribed actions point in different directions, value conflicts emerge (Melnik et al., 2023). Making such conflicts explicit can help uncover obstacles that might otherwise remain hidden. This section answers the second sub-research question:

SQ2: How do values associated with regenerative agriculture in the Zuid-Hollandse Delta conflict internally?

To answer this question, I analysed the value framework presented in section 6.1.3 and integrated this analysis with findings from the observations, and interviews. During the interviews, I asked farmers

explicitly about the barriers and obstacles they encountered in their practice. During the observations, obstacles were also discussed informally where relevant. These data were not analysed immediately for value conflicts. Rather, after constructing the final value framework, I first studied it analytically, asking which values had appeared to pull in different directions during the fieldwork. With this in mind, I then returned to all interview transcripts and observation notes, looking specifically for evidence of these tensions. Two conflicts emerged from this analysis, and these are presented in this section.

6.2.1 Value Conflict 1: Economic viability

The first value conflict concerns economic viability: the ability of a farmer to keep the farm financially healthy and maintain their livelihood. This value appeared as a concern in the discourse analysis and was confirmed by the farmers, who described feeling pressured to maintain high productivity because the prices they receive for their products are low, leaving volume as the primary mechanism for financial survival (Observations Farm 2; Observations Farm 3). Farmer 2 said with irony *“Farmers are not smart people”*, referring to the thin margins and hard work that define the profession (Observations Farm 2). Farmer 3 described that lower production during the transition period, combined with high labour costs and the absence of compensation for farmer-led experimentation, brought him to the verge of quitting (Observations Farm 3).

Within this system, the desire to remain economically viable can create multiple conflicts with other values in the RA value landscape, of which three examples are worked out below.

Contextual information: The history of the productivity logic

Farmer 2 pointed out how this focus on productivity has its roots in the history of the development on Dutch agriculture (Interview Farmer 2). After the Second World War and the following winter full of hunger, the Dutch government decided that they never wanted the Dutch people to be hungry again. Therefore, Dutch farmers have been systematically encouraged to produce more, specialise further, and optimise their operations for volume and efficiency (Sok, 2025). This trajectory produced highly capable agricultural entrepreneurs, but also embedded a logic of intensification that is now difficult to escape.

Economic Viability vs. Care for Nature

When looking analytically at these two values, different norms can be prescribed for each. Care for nature prescribes norms such as ‘increase biodiversity’ and ‘improve soil health’, while economic viability prescribes norms such as ‘generate enough produce to create a living income’ and ‘minimise cost of production’. Where practices following from these norms point in different directions, a value conflict emerges. Three examples of how this was observed in the field are described below.

First, the use of heavy machinery. At Farm 2, planting was carried out using large automated tractors, which the farmer acknowledged compact the soil and damage the soil structure he is simultaneously trying to improve (Observations Farm 2). The farmer explained that manual labour is simply too expensive to be a viable alternative at his scale: *“the way back no longer exists, because manual labour is only getting more expensive.”* (Interview Farmer 2). Similarly, at Farm 3, permanent driving pathways were introduced specifically to limit soil compaction, but this required adapting every machine on the farm with high cost (Observations Farm 3). This example has been made visual in Figure 6.13.

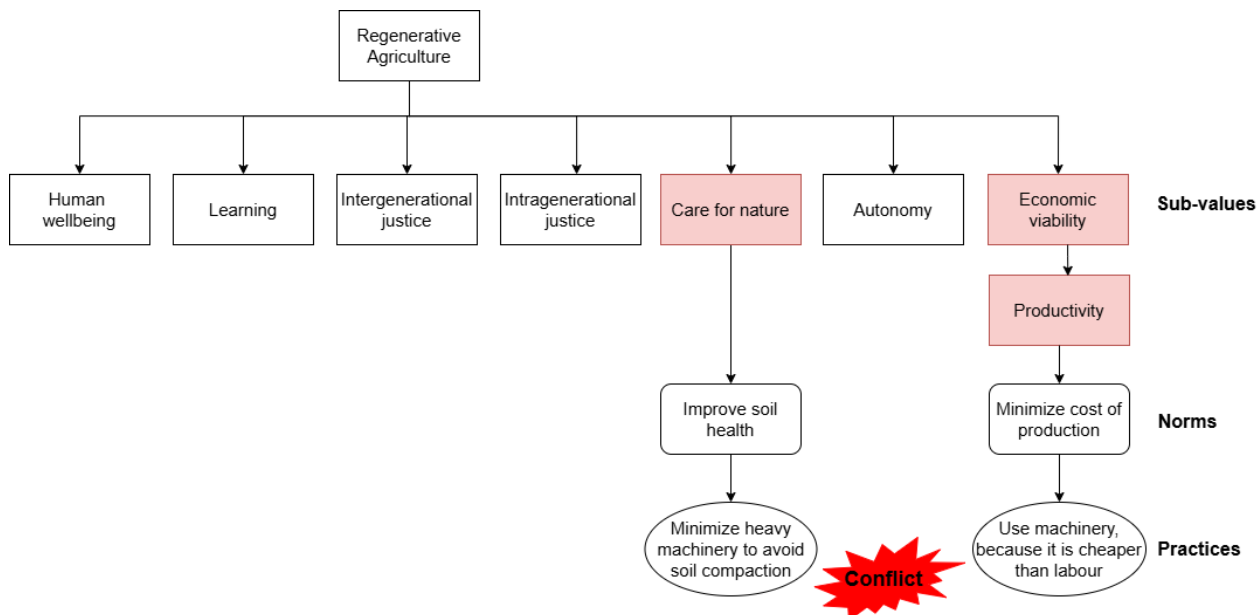


Figure 6.13: Value conflict between economic viability and care for nature in the regenerative agriculture value landscape.

Another example concerns land use. Dedicating land to flower strips, food forests, or nature-friendly banks improves biodiversity, but reduces the productive area available for crops. Farmer 1 noted that flower strips take up approximately five percent of his land, explaining how this represents a production trade-off (Interview Farmer 1). Farmer 3 described how integrating permaculture and a food forest into the farm required creative financial solutions, including the tiny house community, because these areas do not generate short-term income (Observations Farm 3).

A third example concerns chemical inputs. Farmer 2 explained that when a harvest is at risk, he will apply chemical treatment to avoid income loss and food waste, even though this conflicts with his regenerative principles. Similarly, he explained how he used insecticides because it is by far the cheapest option for weed control, while manual removal is financially not feasible (Observations Farm 2).

Economic Viability vs. Human Wellbeing

The value of human wellbeing, both physical and mental, can prescribe norms relating to working conditions that are sustainable, dignified, and healthy. For example, 'working hours must be reasonable', and 'the farmer must not experience excessive stress'. The practices that follow from economic viability can again conflict with these norms and the practices they prescribe.

All the farmers operating under conventional market pressures made very long hours in order to produce sufficiently. Farmer 2 worked from 7:00 in the morning until 22:00 at night, continuing after dinner and receiving a continuous stream of phone calls from employees throughout the day (Observations Farm 2). Farmer 3 acknowledged that the long hours and financial insecurity were not good for him, and that he was trying to find more balance but struggled with that (Observations Farm 3). Farmer 4 worked approximately six days a week and regularly put in additional hours in the evenings in order to manage the multiple revenue streams and responsibilities the farm demanded, explaining that having so much to think about and manage could be a lot to carry (Observations Farm 4).

The contrast with Farm 1 is interesting. Because the cooperative structure provided a stable financial base and did not impose pressure for high productivity, Farmer 1 described his work as something he genuinely enjoyed, without the stress that characterised the other farms. He made reasonable hours and felt no conflict between his work and his wellbeing (Interview Farmer 1). This suggests that the tension between economic viability and human wellbeing is not inherent to regenerative farming itself, but is produced by the specific financial structures within which farmers operate. Where those

structures remove the pressure to maximise output, the conflict dissolves.

These observations were reinforced by my autoethnographic reflections of the fieldwork. After just two days of farm work, the physical exhaustion was astonishing to me, providing an embodied sense of what the daily reality of farming demands (Autoethnographic Reflections).

Economic Viability vs. Learning

When analysing the value of learning, it can prescribe norms that call for time, openness to failure, and space for iteration. For example, 'Farmers must have time to experiment', and 'Failure should be accepted as part of the learning process'. However, the value of economic viability, under conditions of low price margins and high fixed costs, leaves little room for any of these. Income is dependent on what is produced, meaning that failed experiments can have immediate financial consequences. How this tension played out in reality became clear in the field.

Farmer 2 described the regenerative transition as a process of trial and error, adding: *"Nobody knows how it should be done. It has to be figured out. You cannot simply take it ready-made from a book"* (Interview Farmer 2). Yet, the same farmer explained that the commercial research and development in regenerative practices is underfunded, leaving farmers to carry the costs of experimentation themselves (Observations Farm 2). Farmer 3 explained how the costs and time involved in developing new knowledge should not have fallen on him alone, and expressed frustration that research funding flows to institutions while farmers who are actively experimenting on their own land go uncompensated (Observations Farm 3).

6.2.2 Value conflict 2: Intergenerational Justice vs. Intragenerational Justice

A second value conflict emerges for farmers who sell at a higher price (for example because their products are also labelled organic (Farmer 3)) or by operating within an alternative financial structure, such as the cooperative of Farmer 1.

The value of intergenerational justice means that current generations have a responsibility to ensure that future generations can meet their needs. Examples of the norms that can follow from this value include: the land must be left in better condition than it was found, and future generations must have access to plenty of healthy food. Practices following these norms prioritise long-term (ecological) health over short-term yield. An example of a practice that comes from this norm is planting food forests. Farmer 3 planted a food forest on part of his land that will not produce real harvest for years, because he saw it as a responsibility towards the future of the land (Observations Farm 3).

The value of intragenerational justice means that all people living today, regardless of income or social background, deserve fair access to healthy food and to the benefits of a food system. Examples of the norms that can follow include: healthy food must be accessible and affordable now, and the transition to regenerative agriculture must not reproduce existing inequalities.

So, long-term investments in soil restoration with lower yields during transition may be the right practices from an intergenerational perspective. But these same practices make regenerative food less financially accessible to lower-income groups today, leading to inequalities that intragenerational justice wants to address. For example, Farmer 1 highlighted how the cooperative model of his farm is currently only available to people with sufficient financial means, and described the reduction of membership contributions as an active goal he was working towards (Interview Farmer 1).

Figure 6.14 presents a simplified visualisation of a worked-out example of how this conflict can manifest. The value of intergenerational justice generates the norm that future generations must have access to plenty of healthy food, which in turn prescribes the practice of planting a food forest: a long-term investment in a healthy ecosystem that will only yield harvest years into the future. The value of intragenerational justice generates the norm that healthy food must be accessible and affordable now, which prescribes the opposite practice: prioritising land uses that generate high yields in the short term, keeping food available and prices low for people living today. The same piece of land cannot simultaneously be a food forest and a high-yield crop field. In this case, Farmer 3 chose to prioritise

intergenerational justice: he planted a food forest on part of his land, accepting the short-term financial and productive consequences in favour of a long-term ecological investment (Observations Farm 3).

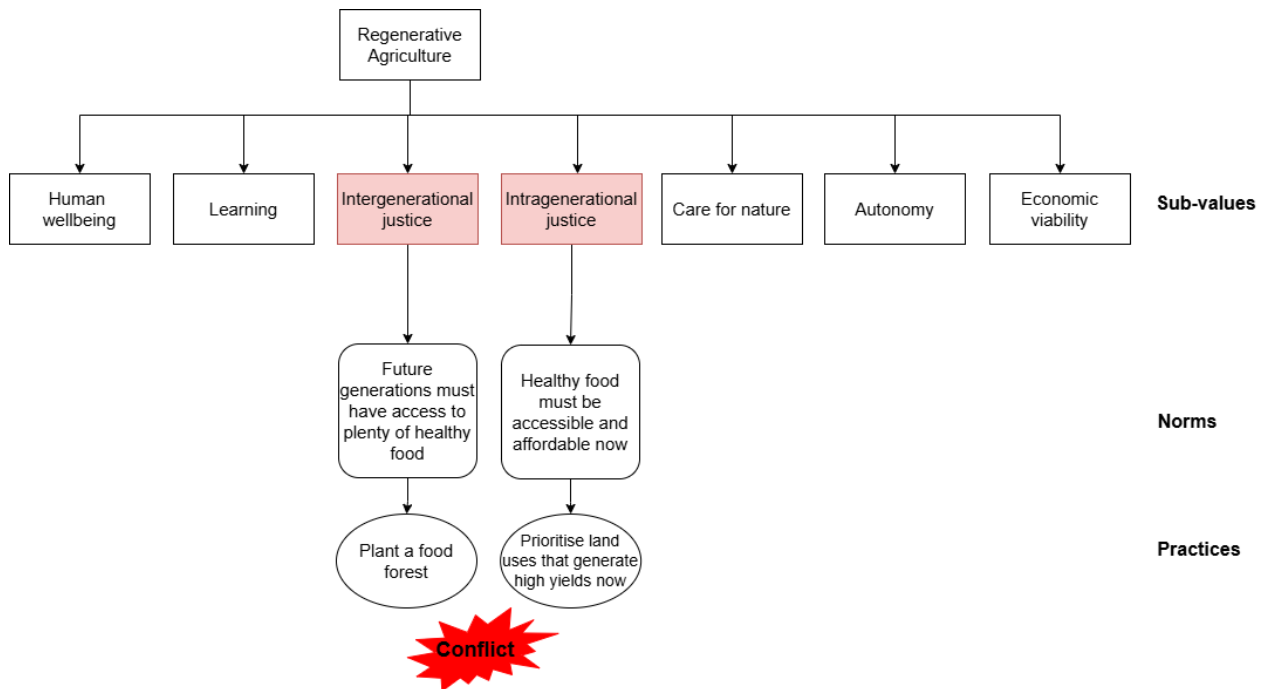


Figure 6.14: Value conflict between intergenerational and intragenerational justice in the regenerative agriculture value landscape.

Food for thought: global food security

A further dimension of this conflict concerns food security at a more global scale. Farmer 2 raised the question of whether the Netherlands, with its fertile soils and favourable climate, has an obligation to produce food not only for itself but for the world (Observations Farm 2). A shift towards lower-yield regenerative production may be the desired course of action for the land and Dutch people in the long term, but it risks reducing the productive capacity that currently contributes to global food availability and thus intragenerational justice on a global scale. This tension was not systematically explored in this research.

6.2.3 Synthesis

This section addressed the second sub-question: *'How do the values associated with regenerative agriculture in the Zuid-Hollandse Delta conflict internally?'* Two value conflicts were identified.

The first centres on economic viability. The farmers in this research described how maintaining a financially viable farm appears to require high productivity within the current agricultural system. This can create conflicts with other regenerative values, and the results of this research identified three such conflicts: with care for nature, human wellbeing, and learning.

The second conflict arises between intergenerational and intragenerational justice. The practices that best serve future generations, such as planting food forests, accepting lower yields during transition, and selling through short local supply chains at higher prices, can make regenerative food less accessible to lower-income groups today.

Value conflicts are inherent to each domain, as 'having it all' simply is not possible. The two conflicts identified in this research cannot be resolved by better planning or more efficient practice. Rather, they are ethical dilemmas. As such, value conflicts can reveal two important things, as explained below, that each carry implications for policymakers and farmers.

First, a value conflict can point to a structural flaw in a system, and the results of this research suggest this is the case for the first cluster of value conflicts. The tensions between economic viability and care for nature, human wellbeing, and learning arise not from the nature of regenerative agriculture itself, but from the conditions within which farmers must operate. They would not need to arise if farmers could sustain a viable income under lower productivity. This conflict, therefore, does not call for individual farmers to make trade-offs, but rather calls for policy to focus on structural changes of the conditions within which farming takes place.

Second, a value conflict can point to a conscious normative choice that needs to be made about which values to prioritise, as is the case for the second conflict. Regenerative practices are simply less productive than conventional agriculture in the short term. In addition to showing farmers what choices they need to make, these types of conflicts can also inform policymakers to design policies procedures that can support farmers to navigate these dilemmas. For example, by compensating farmers for the public goods generated by long-term ecological investments, or by making regenerative food more financially accessible to lower-income groups through subsidies. All policy implications are further worked out in Section 7.2 in Chapter 7.

6.3 The technological and institutional conditions

The value landscape of regenerative agriculture does not exist in a vacuum. In the Zuid-Hollandse Delta, it is mediated by two overlapping systems: an institutional landscape shaped by agricultural policy and economic and market conditions, and a physical landscape shaped by centuries of hydraulic engineering. Together, these conditions influence which values can be expressed, and which are suppressed. This section looks at these two conditions by answering the third sub-research question:

SQ3: How do the institutional and technological conditions in the Zuid-Hollandse Delta mediate the value landscape of regenerative agriculture?

To answer this question, I integrate findings from the discourse analysis and findings from the interviews and observations. All findings are first presented, after which I bring them together in the synthesis, Section 6.3.3.

6.3.1 Institutional conditions

This section examines how the institutional conditions of the Zuid-Hollandse Delta mediate the value landscape of regenerative agriculture. The institutional conditions refer to the formal and informal arrangements, including policies, regulations, governance structures, subsidy systems, and the economic and market conditions that together determine the conditions within which farmers operate. First, the policy discourse is analysed to examine which values are present in agricultural policy and how these compare with the value landscape of RA identified in Section 6.1. This comparison reveals where the normative commitments in policy align with, and where it diverges from, the values that regenerative farmers hold. Second, these findings are supplemented with empirical insights from interviews with farmers and policymakers, and from the observations, which shed light on how institutional conditions are experienced in practice and how broader economic structures shape the conditions within which regenerative farmers operate.

Values in the policy discourse

The second part of the discourse analysis is presented here to explore what values are central within agricultural policy. Before introducing this, a first and important finding is that regenerative agriculture is not recognised as a distinct concept within Dutch agricultural policy. It did not appear as a policy category at any of the governance levels analysed, from European to municipal. The exception is the ReGeNL project, a national research and development initiative, but this constitutes an R&D programme rather than a formal policy instrument. This absence of recognition is itself a finding. Because no policy specifically addressing RA exists, this discourse analysis examines general Dutch agricultural policy at four governance levels: European, national, provincial, and municipal.

Figure 6.15 shows the value appearance on a chunk level of the policy discourse for both contexts (promise and concern).

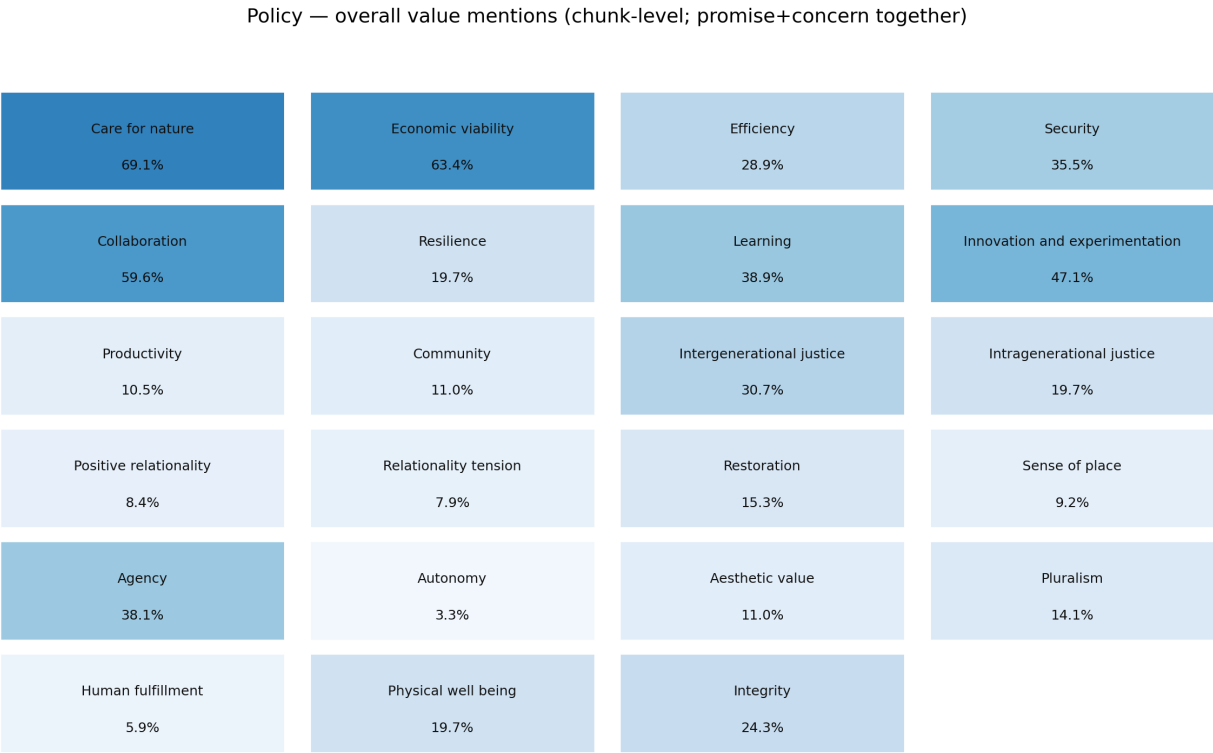


Figure 6.15: Value appearance (%) of the policy discourse for both contexts.

Analysing this figure reveals that the policy discourse is centred around three dominant values: care for nature, economic viability, and collaboration. This suggests that within agricultural policy, ecological impact, the financial sustainability of the agricultural sector, and cooperation are central. A secondary cluster of values also appears frequently, including: innovation and experimentation, efficiency, agency, learning, security (this is about security of the sector, food security, and security against changes in climate/land), and intergenerational justice. As with the scientific discourse, integrity appears in the results but is not interpreted here, as the results for this value were not sufficiently reliable in this corpus.

So, the policy value landscape is relatively plural. However, values like community, human fulfilment, aesthetic value and restoration are largely absent from the policy discourse.

Framing and distribution checks Similar to the first part of the discourse analysis (Section 6.1.1), two checks were performed to examine whether framing biases or subcategory dominance skew the overall results. First, value appearance was broken down by context (promise or concern) to check whether major framing biases occur across the policy discourse, as presented in Appendix B.11.3. As with the practitioner and scientific discourses, promises dominate overall. Three values appear with a slightly higher share of concern framing: economic viability, security, and care for nature. This suggests that policy actors see these topics as something to worry about.

Second, value appearance was broken down per governance level to check whether any single level disproportionately drives the overall results, as presented in Figure B.2 and Appendix B.11.3. Overall, the pattern is quite consistent across levels, with care for nature, economic viability, and collaboration appearing strongly throughout, and values such as community, sense of place, and human wellbeing almost absent at every level. Within this shared pattern, each level has its own emphasis: the European level shows a stronger focus on security and intragenerational justice, the national level on economic viability and agency, the regional level on care for nature and innovation, and the municipal level on

collaboration and learning, reflecting a more process-oriented approach.

Comparative value map

To compare the normative content of policy with that of the RA discourses (practitioner and scientific), Figure 6.16 presents the value appearance of all three discourses at chunk level for both contexts. The comparison reveals both areas of alignment and divergence.

In terms of alignment, care for nature is prominent across all three discourses. This is hopeful, as it is such an important value within regenerative agriculture. Economic viability is also consistently present across discourses. Collaboration features strongly in both the policy and practitioner discourses, and innovation and experimentation are prominent in both as well.

In terms of divergence, the most important finding is that policy is less plural than the RA value landscape. Values like community, human fulfilment, and restoration are largely absent from the policy discourse, while all three appear in practitioner texts and were confirmed in the fieldwork. This absence suggests that the aspects of regenerative agriculture most concerned with social connection, personal meaning, and the active repair of past harm are currently not recognised by the institutional environment within which farmers operate.

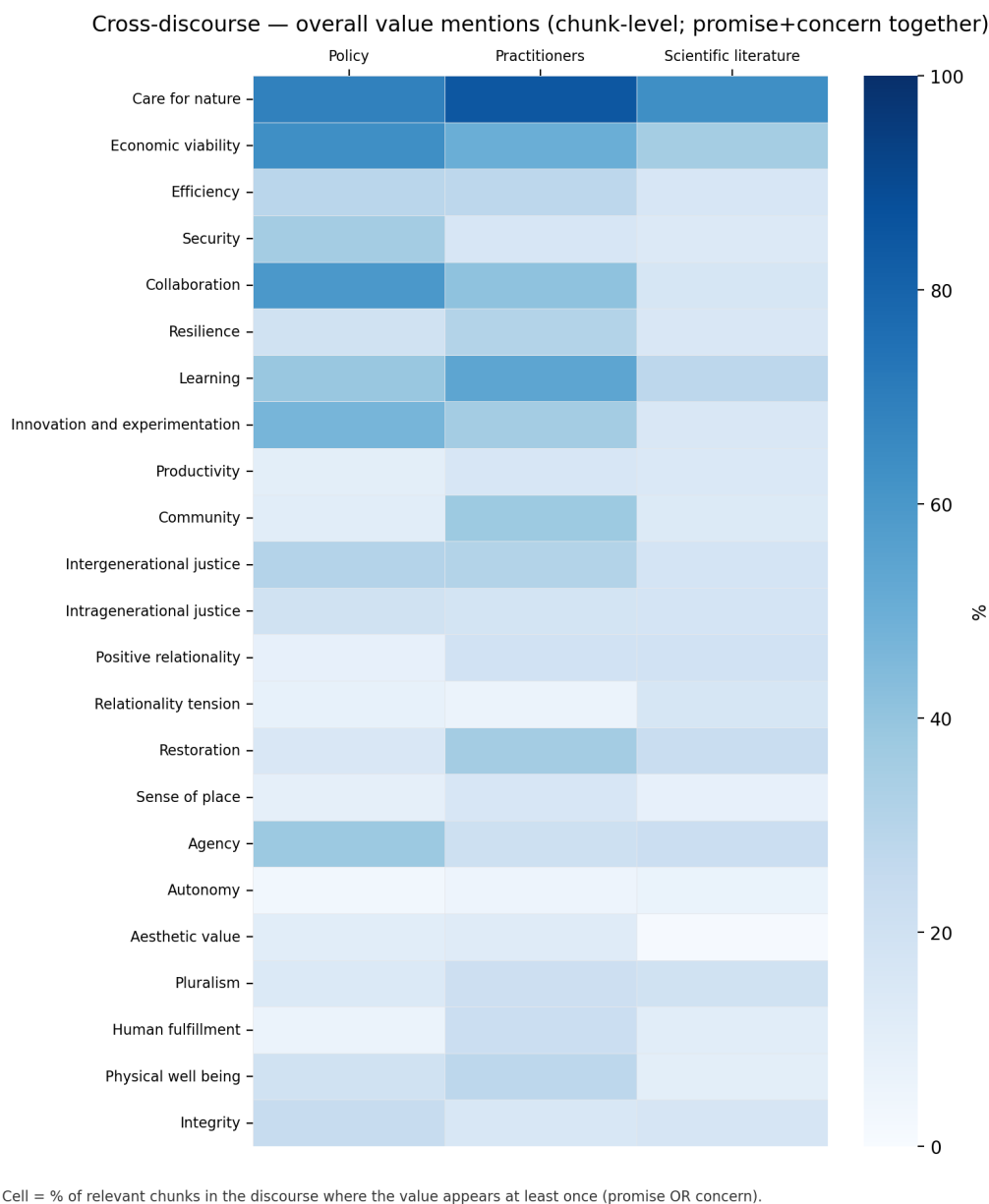


Figure 6.16: Value appearance (%) of the three discourses (practitioner, scientific, policy) for both contexts.

Farmer and policymaker perspectives

The discourse analysis gives insight into what policy documents articulate as important, but this does not necessarily reflect what is experienced in practice. To understand how the institutional conditions are actually experienced by those operating within them, this section integrates the perspectives of farmers and two policymakers gathered through interviews and observations.

Lack of recognition and support Starting from the perspective of the farmers, several farmers reported not feeling seen or supported by the government. At Farm 2, the farmer is frustrated about the gap between policy ambitions and the practical realities of farming: *“If there is one thing to put in your report, it is to not put any further regulatory burden on the farmer”* (Observations Farm 2). He also explained that his green manure practices conflicted with subsidy criteria, not because they were ecologically bad, but because they did not match the exact crops specified in the subsidy requirements, while these were most suitable for his soil (Interview Farmer 2). At Farm 3, the farmer described his pioneering role as lonely, explaining that the system around him continued to demand constant productivity while offering little structural support to those trying to work differently (Observations Farm 3). He also described how subsidy programmes were often loaded with criteria that cost him a lot of time and materials to comply with (Observations Farm 3).

From the policy perspective, a further insight concerns the term regenerative agriculture itself. Neither policymaker interviewed recognised it as a working concept. Policymaker 2 described it as a broad term and suggested that it was best understood as a component of the broader goal of a future-proof countryside, something the municipality is already working towards, without using the label (Interview Policymaker 2). Policymaker 1 stated that the term itself was somewhat vague and what mattered to LEADER was not the label but whether a project represented a step forward in terms of sustainability: *“what name you put on it, we find that less important”* (Interview Policymaker 1). This connects to the finding that RA lacks formal recognition within Dutch agricultural policy, Section 6.3.1.

Taken together, these findings suggest that the institutional environment does not yet recognise or support the full plural value landscape and its diverse range of practices of RA in the ZH Delta. The one-size-fits-all logic of policy instruments conflicts with this plurality, and the absence of formal recognition of RA as a concept means that even where values overlap, they do not translate into targeted support.

A structural distance This lack of recognition seems to be reinforced by a structural distance between policymakers and regenerative farmers. Decision-making processes often involve established intermediary parties such as LTO Noord, which represents the broader farming sector rather than the regenerative niche specifically (Interview Policymaker 2). As a result, the voices and values of regenerative farmers are not systematically present in the rooms where policy is shaped. Several interviewees pointed to this distance as a problem. Farmer 2 suggested that policymakers should spend at least one day on a farm to understand what farming actually involves (Interview Farmer 2). Policymaker 1 echoed this, arguing that policymakers tend to operate from an ivory tower with the best of intentions, but without sufficient feeling for what is feasible in practice (Interview Policymaker 1). He then explained how the bottom-up LEADER programme can be an instrument that can help bridge this distance, because the projects are designed by farmers themselves (Interview Policymaker 1).

Shared values These issues do not mean that policy and regenerative agriculture are entirely at odds. As the discourse analysis showed, there are also overlaps in values. To supplement this, both policymakers interviewed explained how both their organisations value care for nature and intergenerational justice. Policymaker 2 described the goal of future-proof agriculture, which is a goal of the organisation, in intergenerational terms: ensuring that not only the current generation of farmers, but also the next, can make use of the land in a way that remains viable for both the farmer

and the surrounding environment (Interview Policymaker 2). Policymaker 1 stressed the importance of biodiversity, soil quality, and water management as central goals, and saw collaboration between farmers, nature organisations, and other regional actors as essential to achieving them (Interview Policymaker 1). These shared values suggest that entry points for improved policy exist.

A deeper systemic obstacle Beyond the policy level, the findings point to a more fundamental obstacle for RA within the economic system. This research already identified, in Section 6.2, that economic viability can conflict with other values in the regenerative value landscape, and this value reappeared in the policy discourse. The interviews and observations provided more insights into possible power structures that lead to economic viability only being an option under high productivity within the agricultural system.

As mentioned earlier, the agricultural system in the Netherlands, and thus the ZH Delta, has been organised around productivity, efficiency, and scale since the Second World War (Sok, 2025), see Section 6.2.1. The farmers in this research described experiencing the consequences of this embedded logic (Observations Farm 2; Observations Farm 3), and the interviews and observations point to a further dimension: the current power structures that appear to actively sustain it. Both farmers and a policymaker described a supply chain in which Big Agro, encompassing large retailers, processors, the chemical industry, and financial institutions such as Rabobank, appears to have accumulated significant power, leaving farmers with limited influence and limited access to resources suited to regenerative practice. Policymaker 1 suggested that Rabobank in particular bears significant responsibility for having actively encouraged the intensification of Dutch agriculture, while its current sustainability commitments amount to little more than window dressing (Interview Policymaker 1). Farmers at the workshop at Farm 2 described supermarkets and Big Agro as the most powerful actors in the system, while farmers themselves felt they had very little power (Observations Farm 2).

Taken together, these accounts suggest that it is not only policy that is not fully designed around the plural value landscape of RA. More fundamentally, the agricultural supply chain appears to create structural conditions that make it difficult for regenerative farmers to enact their full range of values. As identified in Section 6.2, the pressure to remain financially viable under these conditions can force farmers to prioritise economic viability over other values such as care for nature, human wellbeing, and learning.

6.3.2 Technological (water) conditions

This section presents the water system within the Delta and how it mediates the value landscape of RA. First, I present the findings from the interview with the waterboard member and experiences from farmers 1, 2, and 3 (Farm 4 is excluded here as it does not lie within the Delta). After, I present my analysis of these findings.

Introduction of the findings

The Zuid-Hollandse Delta is an area in which the natural processes that once characterised this landscape, like sedimentation and tidal dynamics, have been halted and redirected through centuries of hydraulic engineering. The result is a highly managed system in which water is continuously maintained through an infrastructure of dykes, polders, pumping stations, and sluices (Interview Waterboard Member). This system is managed by the waterboard (Waterschap) Hollandse Delta.

The primary goals of the system are to secure water quality, water quantity, and safety against water (Interview Waterboard Member). Under changing climatic conditions, however, this system is increasingly vulnerable. For example, the waterboard member described how saltwater intrusion is becoming a growing concern: as rivers take on a more rain-fed character and summer discharge from the Rhine declines, there is insufficient freshwater pressure to keep salt from moving inland. On islands such as Vorne-Putten, this creates a risk that the surrounding water becomes entirely saline, making freshwater intake impossible and posing a direct threat to agricultural water supply (Interview Waterboard Member). Another example of a new challenge is extreme rainfall events. The

system was not designed for the intensity of precipitation now occurring, which poses a flooding risk (Interview Waterboard Member).

Governance of the system Water management decisions in the Delta are made centrally by the waterboard (Interview Waterboard Member). For example, water levels are determined through formal legal instruments called 'peilbesluiten'. These decisions determine the target water level for each polder and are established in consultation with stakeholders, but once set, they are difficult to adjust. In practice, many levels have remained stable for decades, as the physical infrastructure of drainage pipes, culverts, and land elevation determines what is possible (Interview Waterboard Member).¹

Interaction of the system with farmers Farmers in the Delta are entirely dependent on the water system (Interview Waterboard Member). It manages a resource that is vital not only for irrigation but also for maintaining the soil conditions in which crops grow. The waterboard maintains the water levels required for different agricultural functions, flushes brackish seepage water from polders to keep irrigation water fresh, and protects farmland against flooding (Interview Waterboard Member). Farmers are not structurally involved in governance decisions in the water system. Involvement occurs through LTO Noord as an intermediary, rather than through direct participation by individual farmers (Interview Waterboard Member). However, depending on the service level of the waterboard, individual farmers can call the waterboard when they need additional water for irrigation. The waterboard Hollandse Delta tries to offer this service. Farmers one and two indeed reported that the waterboard responds flexibly to such requests (Interview Farmer 1; Observations Farm 2). Farmer 3, however, described a different experience: he felt the waterboard operated as a bureaucratic institution that did not look at the individual farmer, and expressed discomfort with the limited control he had over water management on his own land (Observations Farm 3). The waterboard member acknowledged that the system is not designed for the level of irrigation demand that is currently emerging, particularly during dry periods when multiple farmers draw simultaneously from the same ditch (Interview Waterboard Member).

Relation to regenerative agriculture When asked how regenerative agriculture aligns with the waterboard's goals, the waterboard member's answer was very clear: "*seamlessly*" (Interview Waterboard Member). Practices that can be associated with regenerative agriculture help the waterboard's core goals without requiring any fundamental restructuring of the hydraulic infrastructure (Interview Waterboard Member). Examples are: healthy soils with higher organic matter content retain water more effectively, reducing the need for irrigation and helping to buffer extreme rainfall. Reduced chemical inputs lower nutrient run-off into surface water, improving water quality. Cover crops prevent nitrogen leaching during winter.

The waterboard member identified a conflict with RA too. Maintenance work on ditch banks requires heavy machinery to access farmland, which compacts the soil and thus conflicts with no-tillage and soil preservation principles of regenerative farmers. The waterboard member acknowledged it was a problem for which no solution currently exists (Interview Waterboard Member).

Analysis

Moving from the presentation of the findings to their analysis, I examine how the hydraulic system shapes the conditions within which regenerative values can be expressed. As discussed in Chapter 3, technologies (including hydraulic infrastructures) embody the values they were designed to promote, and so does the way they are governed. In the case of the hydraulic infrastructure of the Zuid-Hollandse Delta, this means that both the physical systems themselves, such as dykes, pumping stations, and fixed

¹Despite these central decisions, the system is also subject to influences beyond the waterboard's control. For example, the water quality is affected by river inflow, agricultural run-off, urban drainage, road traffic, and atmospheric deposition, among other sources. The load of pollution from within the polders often exceeds what enters from outside (Interview Waterboard Member).

drainage networks, and the governance structures around them, such as centralised decision-making by the waterboard, carry embedded values that can mediate the value landscape of regenerative farmers who depend on them. In the case of the water system and RA, this mediation takes two forms: it creates a potential value conflict with autonomy and care for the soil, and it fails to reward a shared value of care for the soil. Both are introduced below.

Potential value conflicts When examining the water management system analytically, it appears to operate according to a technofix logic. This logic holds the assumption that complex socio-ecological problems can be solved through engineering and technical optimisation, without addressing underlying structural or behavioural conditions (Sætra & Selinger, 2024). In the case of the Zuid-Hollandse Delta, this means that the challenges of living in a low-lying, flood-prone landscape have been addressed through an infrastructure of dykes, pumping stations, and drainage systems, rather than through adaptation of land use or farming practices to work with natural water dynamics. As the waterboard member put it: *“The Delta is not a place, it is a process, the process of sedimentation. And at some point we stopped that process by building dykes and pumping out the water”* (Interview Waterboard Member).

Managing this complex technological system requires centralised governance: the waterboard Hollandse Delta oversees and coordinates all water level management across the Delta, making system-wide decisions through formal instruments such as ‘peilbesluiten’ that determine water levels (Interview Waterboard Member). This technofix and centralised logic is also path-dependent, meaning the technological trajectory is difficult to deviate from (Van Staveren & Van Tatenhove, 2016). The waterboard member explained how the ZH Delta has become a managed system that must continuously compensate for its own subsidence and the rising sea, and now that people live and work in this region, there seems to be no way out (Interview Waterboard Member).

The goals of this water system, securing water quality, water quantity, and safety from flooding, suggest an embedded value of human wellbeing, specifically physical safety and security. These values do not inherently have to conflict with the value landscape of RA. Physical human wellbeing even overlaps. However, under the centralised, technofix management of this system, two potential value conflicts emerge.

The embedded values of human wellbeing can generate a norm: the waterboard must keep the population safe from flooding and water scarcity. Under the technofix, centralised logic, this norm translates into the practice of centrally managing all water levels across the Delta through fixed peilbesluiten, leaving individual farmers with limited authority to adjust levels on their own land (Interview Waterboard Member). Two regenerative values and their subsequent practices can then potentially conflict with the value of human wellbeing. How this could work is explained using norms and practices below.

First, the value of autonomy from the RA value landscape can generate the norm that a farmer should have agency over decisions affecting their own land, prescribing the practice of being able to adjust local water levels to respond to the specific conditions of their farm. Second, care for the soil generates the norm that soil moisture must be managed in a context-sensitive way to support soil life, prescribing the practice of fine-tuning drainage and irrigation to the ecological needs of each field. These practices conflict with the practice of central management introduced earlier: a farmer cannot adapt their water management to their specific needs (and the soil conditions of their land). These potential conflicts were experienced by Farmer 3, who described the waterboard as a bureaucratic institution that does not look at the individual farmer, and expressed discomfort with the limited control he had over water management on his own land (Observations Farm 3).

A further example of how a conflict with these regenerative values can be created under the technofix, centralised management logic is the maintenance of ditch banks. What underlying value and norm prescribe this practice is unclear from the results. However, on the level of practices we

still see a conflict emerge. As introduced earlier, heavy machinery must access farmland to carry out the work, and this cannot be adjusted on a farm-by-farm basis within the current system. This practice can conflict with care for the soil, which prescribes the norm of avoiding soil compaction, and with autonomy, which prescribes that farmers should have control over what happens on their land.

It is important to note that these tensions were not experienced by the other farmers: Farmers 1 and 2 described their relationship with the waterboard as manageable (Interview Farmer 1; Observations Farm 2), and the waterboard member reported receiving few complaints (Interview Waterboard Member). The tension identified here is therefore not a generalised conflict, but a localised experience that points to a potential friction between technofix, centralised governance and the values of autonomy and care for the soil within regenerative farming.

A shared value Yet alongside this picture of potential tension, a different dynamic also emerges from the results: one of a shared value. Although the centralised, technofix governance of the water system can cause conflicts with the autonomy of regenerative farmers and their care for their soil, the underlying goals of the waterboard are not opposed to the soil care of regenerative farmers. On the contrary, the waterboard expresses its own form of instrumental care for the soil: healthy soils serve its core goals of water retention, reduced run-off, and lower irrigation demand, which overlaps with the care for the soil that emerged as the shared anchor value across all four farms. The waterboard would benefit from a regenerative transition, as confirmed by the waterboard member (Interview Waterboard Member). Yet nothing in the current system rewards farmers for delivering these benefits. The waterboard member acknowledged this gap but noted that the financial scale of agricultural operations far exceeds what the waterboard could support through subsidies (Interview Waterboard Member). This is a case of a shared value, care for the soil, that has not yet been translated into a shared and just practice.

6.3.3 Synthesis

This section addressed the third sub-research question: *How do the institutional and technological conditions in the Zuid-Hollandse Delta mediate the value landscape of regenerative agriculture?*

The findings of this research suggest that the institutional conditions of the Zuid-Hollandse Delta mediate the value landscape of regenerative agriculture in three interconnected ways: through a failure to recognise and support the full plurality of RA values, through a structural distance between policymakers and farmers, and through the structural economic conditions that make economic viability contingent on high productivity.

Regenerative agriculture currently lacks institutional recognition within Dutch agricultural policy, with the exception of the ReGeNL project. The agricultural policy discourse does share several values with regenerative agriculture, most notably care for nature, collaboration, and intergenerational justice, representing potential entry points for improved engagement between policymakers and regenerative farmers. However, the discourse analysis also revealed that values such as community and human fulfilment, which were prominent in practitioner texts and confirmed in the fieldwork, are largely absent from policy documents. This suggests that policy does not yet recognise the full plural value landscape that regenerative farmers embody. This partial recognition is reinforced by how policy operates in practice: several farmers described how existing instruments tend to apply a one-size-fits-all logic that burdens them with compliance costs and can penalise practices that do not fit predefined criteria. A structural distance between policymakers and farmers, mediated through intermediaries such as LTO Noord, compounds this further, as the specific values and experiences of regenerative farmers rarely reach the rooms where policy is shaped. More fundamentally, the interviews with farmers and a policymaker pointed to an economic system and supply chain that are shaped by decades of Big Agro influence and organised around productivity and scale. This system leaves little room for the full expression of regenerative values by exerting pressure on farmers to

prioritise economic viability and high productivity, as was seen in Section 6.2. This can be interpreted as a misalignment with the plural value landscape that regenerative farmers embody and suggests that the obstacles to a regenerative transition are a structural flaw in the agricultural economic system rather than a lack of recognition in policy procedures and design alone.

At the technological level, this research suggests two ways in which the hydraulic infrastructure can mediate the value landscape of RA in the ZH Delta: through a technofix logic and centralised control that can create conflict with certain regenerative values, and through a failure to reward a shared value of care for the soil.

The findings suggest that the hydraulic infrastructure operates according to a technofix logic, in which water management is treated as a problem to be solved through engineering and technical optimisation, governed centrally by the waterboard. This system embeds the values of physical human wellbeing, safety, and security. These values do not inherently conflict with the value landscape of regenerative agriculture. However, under the technofix, centralised logic through which they are enacted, conflicts can arise with two regenerative values: autonomy and context-sensitive care for the soil. Both are constrained by a system that manages water levels system-wide and does not allow for farm-level adjustment. These tensions were experienced directly by Farmer 3, but not by most other farmers, suggesting they are localised and potential rather than generalised conflicts.

At the same time, the waterboard and regenerative farmers share an instrumental care for the soil, yet this shared value has not been translated into shared practice: the waterboard benefits from regenerative practices without any mechanism to compensate farmers for delivering these public goods.

7 | Discussion and recommendations



Beyond the answers to the research questions presented in Chapter 8, this research makes a number of broader contributions that are discussed in this chapter. These include scholarly and practical contributions. Following these contributions, I present the policy recommendations.

7.1 Contributions

This thesis makes scholarly contributions within three dimensions: conceptually, methodologically and scientifically. After these are introduced, I present the practical contributions.

7.1.1 Scholarly contributions

First and foremost, this work is a scholarly contribution: it advances conceptual, methodological, and empirical knowledge on values and regenerative agriculture, as is explained in this section.

Conceptual contribution

This research makes a contribution by conceptualising regenerative agriculture as a compound value. This way of looking at this practice has offered several advantages. First, it enabled the complex and plural character of regenerative agriculture to be captured fully. Regenerative agriculture cannot be reduced to a single normative commitment or value, but is a diverse, grassroots practice driven by a wide range of motivations and priorities. Treating it as a compound value makes this plurality visible, rather than flattening it.

Second, conceptualising regenerative agriculture as a compound value enables the identification and analysis of value conflicts. Where multiple values coexist, incompatible courses of action can arise. This lens makes those conflicts visible, and thus analysable.

This way of conceptualising a practice has potential beyond this specific study. Any complex, normatively rich practice (whether in agriculture, or any other domain) when approached through the lens of compound values can create interesting insights. For researchers, it offers a way to map plurality and conflict. For policymakers and other actors trying to understand and support such practices, it provides a way to understand these practices and to know how to design their support to mitigate the conflicts that arise.

Methodological contribution

This research takes a methodologically creative approach in which multiple sources of knowledge are treated as equally legitimate inputs to the analysis. In doing so, it can serve as a methodological example for other researchers working on complex, value-laden, or locally embedded problems¹. The mixed-methods design draws on scientific literature, practitioner documents, lived farming experience, farmer and policymaker perspectives, policy documents, and the researcher's own experience. This plurality reflects my commitment to epistemic justice, recognising that different knowledge holders

¹This approach is particularly well-suited to studying regenerative agriculture, which is a local and context-dependent practice enacted differently on each farm and shaped by soil type, personal motivation, and the relationships between farmers, land, and community. It also fits the study of values specifically: care for nature, for example, can appear as an explicit goal in a policy document, as a daily practice on a farm, or as a reflection in an interview. No single method can access all of these modes simultaneously.

(scientists, farmers, volunteers, policymakers, and the researcher) each have partial but valuable access to the phenomenon under study. The diversity of methods also strengthens the validity of the findings through triangulation.

Furthermore, this research advances the emerging body of work using LLM-supported discourse analysis. By documenting the methodology extensively, future researchers can build on and refine this approach. It also offers an example of how LLMs can be used transparently and for a meaningful purpose: despite their well-documented environmental and social costs (Section 5.2.4), they enabled an engagement with a body of knowledge that would not have been achievable within the available timeframe through manual methods alone.

Food for thought: the value of participatory observations beyond data collection

This research has shown how participatory observation provides benefits that extend well beyond data collection. First, full immersion in the practice being researched generates an understanding that no amount of reading or interviewing can substitute. In this case, participating in farm work revealed the physical demands, time pressures, and unpredictability of farming in a way that shaped how all other data was read and interpreted. Second, immersion provides motivation: experiencing the struggles of farmers first-hand creates a form of engagement that sustained the analytical work. Third, participant observation enables reciprocity. By contributing labour to the farms, the researcher gives something back to the people whose time and knowledge provide the empirical foundation of the work. When working with marginalised groups, as this research does, this reciprocity is not merely a methodological nicety but an ethical responsibility.

Scientific contribution

In addition to the conceptual and methodological contributions, this research fills the two previously identified research gaps, see Section 2.5, and contributes to the field of Industrial Ecology.

The first research gap addressed by this study concerns the limited social research on regenerative agriculture, particularly on the moral values that underpin it. As discussed in Section 2.5, existing social research has primarily examined human-environment relationships and the relational or mindset shifts associated with regenerative practice, as in the work of Seymour and Connelly (2023), Leitheiser et al. (2022), and Wojtynia et al. (2023), while explicit engagement with moral values remains limited to a small number of exceptions, such as Gordon et al. (2025) and Pape et al. (2025).

This research builds on and extends this emerging body of work in two ways. First, it offers a broader perspective than prior studies. It moves beyond the human-nature relationship as the focus and captures the full value landscape of RA, including values like autonomy and intergenerational justice. By doing so, this research captures the full complexity and plurality of regenerative agriculture as it is lived and practised. This is in line with the call for value pluralism by Gordon et al. (2025), and extends it with empirical evidence from the Dutch Delta context. Second, this research examines value conflicts within regenerative agriculture. The identification and analysis of conflicting values is new in this body of literature. It adds to a more complete and practically useful picture of what the regenerative transition can involve and where its obstacles lie.

Beyond addressing this research gap, the findings also contribute to a few specific findings or theories of other studies. First, Schreefel et al. (2020) identified a strong focus on soil within RA literature and proposed soil conservation as the entry point for a definition. This research grounds their proposed entry point in the lived perspectives of the people actually practising RA, since care for the soil emerged as a value shared across all four farms.

Furthermore, in their work Tiftonell et al. (2022) question whether transformative approaches to sustainable agriculture are possible without confronting the political structures that have made today's agricultural systems highly input-dependent, resource-degrading, and, in their words, 'unfair, and

unpopular. This research provides empirical support for asking that question. The value conflict between economic viability and the broader RA value landscape, rooted in the power structures of the Dutch agricultural system, shows that these political and structural building blocks must indeed be revisited.

Lastly, Wojtynia et al. (2023) highlighted the importance of combining system and agent perspectives in agricultural sustainability transitions, identifying three interacting spheres of transformation: the political (structures shaping conditions for change), the personal (individual values and worldviews), and the practical (behaviours and technical solutions). This research makes visible how values from the personal sphere translate into concrete barriers in the practical sphere, in the form of value conflicts, and how the political sphere constrains the personal sphere by leaving values unrecognised.

The second research gap concerns the lack of research on regenerative agriculture within a delta context, and specifically on how the highly engineered water management systems present in such landscapes interact with agricultural practice. Existing studies that are situated in delta contexts, such as from Kersey et al. (2024), treat the delta as a geographical context rather than as an active technical and institutional dimension that shapes what is possible on the farm and a regenerative transition. This study is the first to bring that critical perspective on how the engineered water system of a Delta interacts with the value landscape of regenerative agriculture. By combining this analysis with an analysis of the institutional conditions shaping RA, this study is the first to study regenerative agriculture within its full socio-technical context. Furthermore, Van Staveren and Van Tatenhove (2016) found that the long-term reliance on large-scale hydraulic infrastructure has created technological lock-in and path dependency in the Dutch Delta, making transitions towards more sustainable systems difficult. The findings of this research point in a similar direction within the Zuid-Hollandse Delta: the technofix logic embedded in the Delta's water management system is similarly path-dependent, and could form an obstacle in a regenerative transition as climate pressures intensify.

This work was developed by an Industrial Ecology student, and although value research may not be the most conventional approach within the field, it nonetheless contributes a new and creative dimension to it. IE can be defined as 'the ensemble of methods used to systematically assess the interactions between human activities and the environment, offering a holistic and practical approach towards sustainability' (Leiden University, n.d.). This research demonstrates that such interactions can also be examined through a value lens: by analysing the moral values embedded in the social, ecological, economic, and technological dimensions of a socio-technical-ecological system.

7.1.2 Practical contribution

This work also attempts to bring science and society closer together: to make academic insights usable for the people and institutions it concerns. When looking at the results of this study, several concrete insights emerge that are relevant for farmers, policymakers, and other actors engaged in the regenerative transition.

The plural value landscape of regenerative agriculture in the ZH Delta

A first contribution is the empirical demonstration that regenerative agriculture in the Zuid-Hollandse Delta encompasses a broad and plural value landscape (Section 6.1). The research identified values ranging from care for nature, intergenerational justice, and autonomy to community, human fulfilment, aesthetic value, economic viability and more. This plurality can be explained as being the result of the bottom-up emergence of RA as a practice. It is not a centrally defined or imposed system, but each farmer within this research has adopted this way of farming on their own. Each farmer thus has their own motivations, priorities, and ways of creating value. Despite this diversity, two values were shared across all four farms. Care for the soil emerged as the strongest anchor, consistently described by farmers as the core of their regenerative practice. Learning was also shared, though expressed differently at each site and playing a more variable role.

This finding has direct implications for how regenerative agriculture should be defined and supported.

The concept currently lacks a universally accepted definition, and this finding suggests that a narrow or overly prescriptive definition would fail to capture and could exclude much of what makes regenerative agriculture valuable. How this is translated into a recommendation for policymakers is explained in the policy recommendations in Section 7.2.

Value conflicts as barriers

A second practical contribution is the identification and analysis of two value conflicts within the regenerative value landscape. Understanding these conflicts makes some of the barriers that regenerative farmers run into explicit and communicable. The conflict between intergenerational and intragenerational justice, for example, is currently resolved by most farmers by prioritising intergenerational justice. However, this is not the only way to resolve it. Policy instruments could help to allow both values to be pursued without forcing a trade-off onto the farmer. Making the conflict explicit is a precondition for designing such solutions.

Note: The burden of navigating these conflicts

The burden of navigating and communicating these conflicts should not fall onto the farmer. Regenerative farmers are already operating under significant pressure. The responsibility for addressing structural value conflicts lies with government and societal actors, such as NGOs, who have both the mandate and the capacity to influence the conditions within which farmers operate.

Power structures underlying economic viability

A third practical contribution comes from the first value conflict identified: economic viability conflicting with multiple other regenerative values (Section 6.2.1), and from the analysis of the institutional conditions shaping that conflict (Section 6.3.1). Across multiple sources in this research, a picture emerged: economic viability appeared as a concern in both the practitioner and scientific discourses, farmers described the financial pressure of the transition in their own words, and Policymaker 1 pointed explicitly to the role of financial institutions and agro-industry lobbying in sustaining a system organised around high productivity. Taken together, these accounts suggest that the tension between economic viability and the broader regenerative value landscape is not a matter of individual farm economics, but appears to reflect deeper power structures in the agricultural supply chain. This implies that a reorientation of economic incentives and power structures is necessary, as is worked out further in the policy recommendations in Section 7.2.

Note: Positioning this finding

This power imbalance is not a new finding, and I do not claim it as my own insight. Conti et al. (2021) have described these dynamics at a global scale, as introduced in the stakeholder analysis (Section 4), and farmers and policymakers in this research described them in their own words. What this research contributes is another opportunity to make them visible and to show how it creates value conflicts, grounded in the lived experiences of regenerative farmers in the Zuid-Hollandse Delta. In doing so, it may offer farmers and advocates an opportunity for naming and articulating the structural conditions they face.

The regenerative farmer as a marginalised actor

A fourth practical contribution concerns the position of regenerative farmers within the agricultural system. Multiple sections of this research suggest that regenerative farmers occupy a marginalised position. In the stakeholder analysis, they appeared as a group with high interest but low power. The value conflict analysis revealed how financial pressures constrain their ability to act on their values. The institutional analysis showed how their perspectives are rarely directly present in policy processes, reaching policymakers primarily through intermediaries such as LTO Noord. And the hydraulic analysis indicated that they have limited direct influence over the water system on which their farms

depend, while delivering public goods that the system benefits from without compensation. This position is relevant to the question explored in this thesis: if regenerative farmers lack power, representation, and resources, the space in which they can enact their values is constrained, and the value conflicts identified in Section 6.2 become harder to navigate. The implications of this finding for policy are worked out in Section 7.2.

Tensions between regenerative values and the hydraulic system

A fifth practical contribution is the identification of possible tensions between the Delta's hydraulic infrastructure and the value landscape of regenerative agriculture, as identified in Section 6.3.2. As described there, this system embeds the values of physical human wellbeing, safety, and security. These values do not inherently conflict with the value landscape of RA, but under the technofix, centralised logic through which they are enacted, conflicts can arise with two regenerative values: autonomy and context-sensitive care for the soil. This was experienced directly by Farmer 3, but not by the other farmers, and should therefore be understood as a potential rather than generalised conflict at this point in time.

However, as explained by the waterboard member, climate change intensifies pressure on the hydraulic system through saltwater intrusion, sea level rise and extreme weather events (such as heavy rainfall and droughts), see Section 6.3.2. This means that these tensions could become more acutely experienced. As water becomes scarcer and less predictable, farmers become more dependent on the waterboard's capacity to manage the water, leaving them with even less autonomy over the conditions in which they try to care for their soil. This finding should therefore serve as a point of critical discussion for policymakers and water managers, and is worked out further in Section 7.2.

Beyond the conflicts identified empirically, one could question more broadly whether the plural value landscape of regenerative agriculture is compatible with the technofix, centralised logic of the hydraulic system in the Zuid-Hollandse Delta. Regenerative agriculture and its plural landscape call for space for variability, and context-sensitive decision-making, and the technofix logic could reduce that space in ways that extend beyond what the current empirical findings reveal. A concrete example is the value of learning, specifically the sub-value experimentation that regenerative farming depends on. Regenerative agriculture is a practice of trying, adjusting, and adapting. A centralised water system designed for stability and control, in which water levels are fixed system-wide and difficult to adjust, leaves limited room for the kind of local variability that such experimentation requires. As climate change further increases the pressure on the waterboard to maintain control, tensions like these could emerge. However, this remains speculative and requires further research, as discussed in Section 8.3. Together with the tensions described above, it should serve as a point of critical discussion for policymakers and water managers.

7.2 Policy recommendations

From the most important insights, explained in Section 7.1.2, five recommendations for policy emerge and are introduced in this section.² These recommendations should be understood as contributions to an ongoing discussion, rather than as definitive policy solutions. What this research can offer is a set of directions, grounded in the value landscape, conflicts, and institutional and hydraulic conditions identified throughout this thesis, that point towards a more just and supportive policy environment for regenerative agriculture. Each recommendation is therefore structured in two parts: first, a general direction grounded in the findings of this research and second, a concrete example of how this direction could be put into practice.

Figure 7.1 provides an overview of the recommendations and the findings that they emerge from.

²These recommendations were inspired by the Three-Tenets Framework, developed by McCauley et al. (2013) in the energy justice literature. It outlines three dimensions of justice: distributive (who bears the costs and who receives the benefits), procedural (how decisions should be made (Van Der Kooij, 2025)), and recognition (who or what needs to be seen and valued (Van Der Kooij, 2025)).

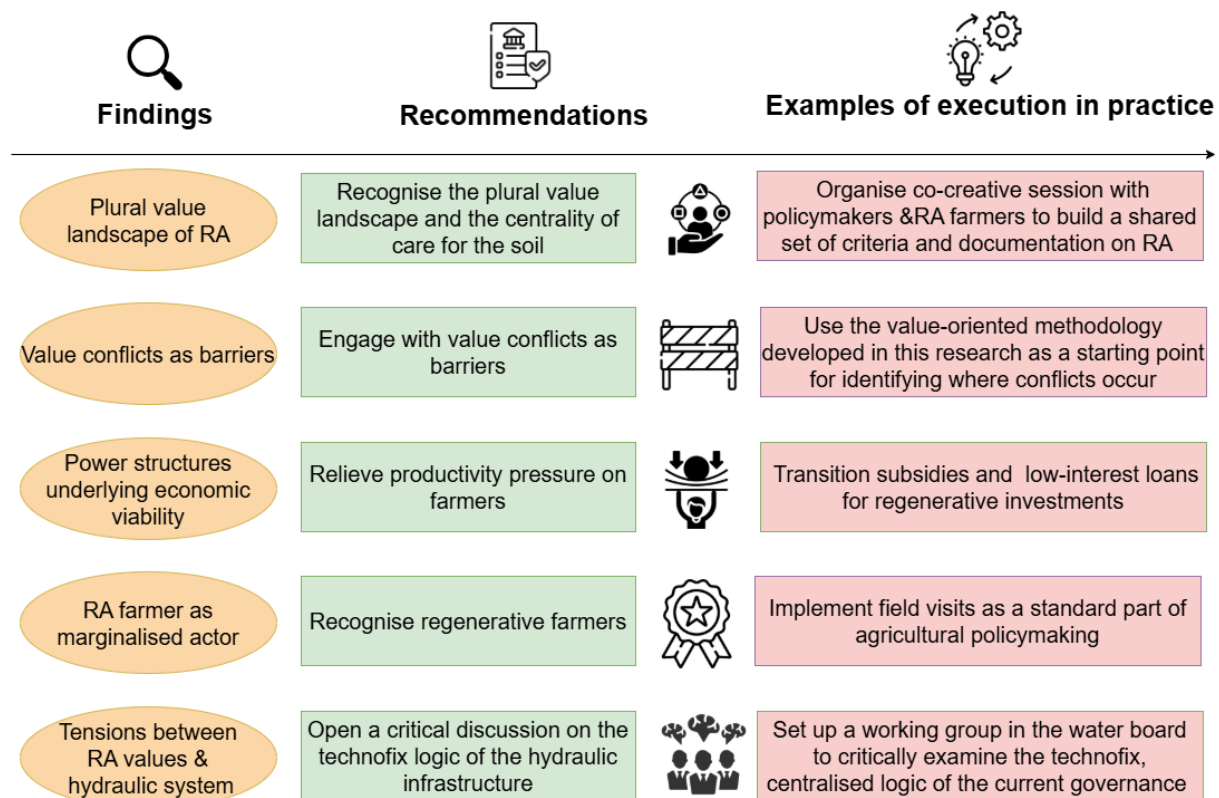


Figure 7.1: Overview of policy recommendations and the findings they emerged from and an example of how to execute the recommendation in practice.

7.2.1 Recognise the plural value landscape and the centrality of care for the soil

This research found that regenerative agriculture currently lacks institutional recognition as a distinct concept within Dutch agricultural policy, with the exception of the ReGeNL project (Section 6.3). The absence of formal recognition does not, on its own, prescribe a particular course of action. However, given the growing momentum of the regenerative movement and its potential ecological and social contributions, as outlined in the introduction (Chapter 1), it seems just for regenerative agriculture to be recognised within Dutch agricultural policy, or at the very least, for a formal discussion on this to take place.

What the findings of this research speak to more directly is how such recognition should be approached. The empirical findings show that regenerative agriculture is constituted by a plural and diverse value landscape, shaped by the worldviews, motivations, and local conditions of each individual farmer (Section 6.1; Section 7.1.2). Any institutional recognition that imposes a narrow or prescriptive definition risks flattening this diversity, and with it, excluding the farmers and practices that give the movement its meaning. At the same time, the findings identified two values shared across all four farms: care for the soil, which emerged as the strongest anchor, and learning. It is therefore recommended to build policy recognition primarily around care for the soil as the shared foundation, while explicitly leaving space for the plurality of values and practices that surround it.

It must be noted, however, that a broad definition also carries a risk of misuse, for example, through greenwashing. This suggests that top-down facilitation is needed to support a bottom-up process of defining regenerative agriculture, in a way that reduces the risk of misuse while preserving the plurality this research has shown to be characteristic of the movement.

One way this could be put into practice is through a co-creation process, for example, organised by the Regio Zuid-Hollandse Delta or the province of Zuid-Holland, bringing together policymakers from different governance levels and regenerative farmers. Such a process should not aim to produce a

fixed definition in a single session, but rather to start a more continuous dialogue, in which a shared set of criteria for regenerative agriculture is developed, tested, and revised over time, anchored in care for the soil. Ideally, this process should also include a voice representing the interests of nature, particularly the soil itself, as it emerged as being so central to RA. The value framework and discourse analysis developed in this research could serve as a starting point for these discussions, offering a foundation to build on, test, and ultimately make their own.

7.2.2 Recognise regenerative farmers

The findings of this research suggest that regenerative farmers occupy a marginalised position within the Dutch agricultural system (Section 7.1.2). At the same time, the farmers offer potential ecological and social contributions that extend beyond food production (Sher et al., 2024), including soil restoration, biodiversity improvements, community connection, and water quality. This is especially relevant with respect to the water system: the improved soil conditions that regenerative practices create directly serve the waterboard's own goals, yet without any compensation for this in return (Section 6.3.2).

Based on these findings, regenerative farmers should be more explicitly recognised in policy and more broadly in society. This recognition should be embedded in policymaking processes at all governance levels, and should translate into concrete changes in how farmers are represented, supported, and compensated. A first step towards this is the working definition proposed in the previous recommendation, which would give regenerative farming a legitimate status within policy. Four further directions through which this recognition could be operationalised are introduced below.

One way to realise this recognition could be to create more direct channels through which regenerative farmers can participate in decisions that affect their practice. Current decision-making channels rely largely on intermediaries such as LTO Noord, which represents the broader farming sector rather than the regenerative niche specifically (Section 6.3). Bottom-up instruments such as LEADER offer an interesting model and could be expanded, as they allow subsidies and support to be tailored to what farmers actually need. It must be acknowledged, however, that increasing direct participation risks placing additional burden on farmers who are already under pressure. Participation should therefore be designed with care to be accessible, not extractive.

A second concrete recommendation follows from the autoethnographic component of this research (Autoethnographic Reflections). I experienced how meaningful it is to embody, even briefly, the practices of those one is researching or making policy for. A day spent helping on a farm generates an understanding that no document or meeting can substitute. It is therefore recommended that policymakers working on agricultural policy spend time (i.e. 1 or 2 days) working on a regenerative farm. This would deepen policymakers' understanding of the position of regenerative farmers, and could positively affect how this group is recognised within the agricultural system.

Third, a very concrete way to express recognition is through compensation. To acknowledge the regenerative farmers, payment schemes that compensate farmers for the public goods they create, such as ecosystem services, could therefore be developed as a concrete action.

Finally, policymakers could actively increase the public visibility of regenerative farmers and the value they create. A concrete way to do this would be for the Regio Zuid-Hollandse Delta or the province to commission a documentary, booklet, or another format that brings the stories and practices of regenerative farmers to a broader audience, helping the public understand what regenerative agriculture involves beyond the food on their plates.

7.2.3 Engage with value conflicts as barriers

The two value conflicts identified in this research (Section 6.2; Section 7.1.2), between economic viability and a broad set of regenerative values, and between intergenerational and intragenerational justice, suggest that such conflicts are not always individual problems for farmers to resolve alone. Rather, they can point to more structural obstacles that policy could help address. This shows that engaging

explicitly with the values of those one is making policy for can generate meaningful insight into the barriers they face and the issues underlying them. It is therefore recommended that policymakers engage more explicitly with value conflicts, both within the context of agricultural transitions and in other policy domains where multiple values are at stake.

One practical way to implement this recommendation is to use a value-oriented approach, such as the methodology developed in this research, as a starting point for identifying where conflicts occur within a given policy area and what they reveal about the underlying system.

7.2.4 Relieve productivity pressure

Beyond engaging more explicitly with value conflicts in policymaking, policymakers should also contribute to relieving the most significant value conflict identified in this research: the tension between economic viability and a broad set of other regenerative values (Section 6.2; 7.1.2). Farmers in this research described this conflict as arising from a system in which financial survival depends on high productivity. Based on these findings, policy should focus on relieving this pressure, particularly during the transition period, when yields are lower and investment costs are high.

Concrete instruments could include transition subsidies, low-interest loans for regenerative investments, and income support during the years in which farms are converting to regenerative practices. These instruments should be considered across all levels of policymaking, from European to local.

The findings of this research also suggest that this conflict is sustained by a deeper concentration of power in the hands of large retailers, processors, and financial institutions (Section 6.3; 7.1.2). This points towards a need for policy to also address these power imbalances, or at the very least, to invest in further research into how they affect the regenerative transition (also see Section 8.3).

Potential directions include supporting the development of shorter and fairer supply chains, incentivising retailers to pay a premium for regenerative products, and encouraging financial institutions to develop loan models better suited to the long-term investment horizons of regenerative farming.

7.2.5 Open critical discussion about compatibility between the technofix, centralised hydraulic context and RA values

The findings of this research identified possible tensions between the centralised, technofix governance of the hydraulic system and the regenerative values of autonomy and care for the soil (Section 6.3.2; Section 7.1.2). While this tension is currently experienced by only one farmer, the intensifying pressures of climate change could make it more broadly experienced over time. Based on these findings, it is recommended that policymakers and water managers open a critical discussion on whether and how the current hydraulic governance system is compatible with the plural values and practices of regenerative farming, particularly around autonomy and soil care.

A possible starting point could be a local working group within the waterboard tasked with critically examining the technofix, centralised logic of the current governance model: whether this logic is compatible with the needs of regenerative farmers, where it creates friction, and how governance could be adjusted to create more room for the autonomy and soil care that regenerative farming can require.

Food for thought: Is this hydraulic system viable in the long-term?

Beyond its relationship to RA, a broader question can be raised: is the current hydraulic governance system, with its centralised, path-dependent and technofix logic, sustainable in the long term? This is a question that could not even be answered by the waterboard member interviewed for this research and extends beyond the scope of this thesis. However, it is a relevant question that must be asked (also see my recommendations for future research, Section 8.3).

8 | Conclusion, limitations, and future research & actions



This chapter presents the conclusion of this research, in which I summarise the most important findings and answer the research questions. I then discuss the limitations, and end with my recommendations for future research and future actions.

8.1 Conclusion

The Zuid-Hollandse Delta, a fertile and productive region, is home to the largest agricultural area in the Netherlands. Dutch agriculture, however, currently operates under an industrial productivist model that generates considerable ecological and social costs (Gordon et al., 2022). Regenerative agriculture offers a promising pathway towards a more sustainable and climate-neutral agricultural system (Newton et al., 2020), but lacks institutional recognition and a sufficient social research base to support a meaningful and just transition. This gap is particularly pressing in the Delta context, where agricultural practice is inseparable from a highly engineered hydraulic system that is itself becoming increasingly vulnerable under climate change (Eslami et al., 2025). To address these gaps, this research conceptualises RA as a compound moral value that has interacting sub-values and explores how the value landscape, including internal conflicts, of regenerative agriculture, and specifically in the Zuid-Hollandse Delta, is constituted, and how this landscape is mediated by technical (water system) and institutional conditions.

I started by exploring which values can be associated with regenerative agriculture, specifically in the Zuid-Hollandse Delta (SQ1). The LLM-supported discourse analysis of practitioner and scientific texts revealed a broad and plural value landscape of RA in the documents. Care for nature emerged as the most prominent value across both discourses, alongside values around collective responsibility and knowledge, including collaboration, learning, community, and innovation and experimentation, and justice-oriented values such as intergenerational justice and restoration. Economic viability appeared as an important value, frequently framed as a concern.

Empirical fieldwork, consisting of observations and interviews at four regenerative farms in the Zuid-Hollandse Delta, contextualised these findings to the region. It confirmed this plurality by showing how different values are expressed across the farming sites. This plurality was captured in the value framework presented in Section 6.1.3. Despite these differences, two values were shared across all four farms: learning, expressed differently at each site, and care for the soil, which was universally present and consistently described by farmers as the core of their regenerative practice. Each farmer, in their own way, invested in soil health as the foundation of their practice, for example, through composting, avoiding tillage, restructuring machinery, or minimising chemical inputs. This shared commitment to soil care reveals what care for nature, so prominent in the discourse analysis, means in regenerative practice in the Delta: a daily care for the living system beneath their feet.

Conceptualising RA as a compound value means that each sub-value prescribes its own norms and corresponding practices, and where these practices point in different directions, value conflicts emerge. Having established what values underpin RA as a compound value, I explored how these

interacting sub-values can conflict (SQ2). To identify these conflicts, the value framework was worked out further to norms and practices emerging from the different values, based on empirical findings from observations and interviews. Two major value conflicts were identified. The first concerns economic viability. Within the current agricultural system, maintaining a financially viable farm often requires high productivity, and this requirement generates conflicts with, for example, care for nature, human wellbeing, and learning.

The second conflict arises between intergenerational and intragenerational justice. Practices that best serve future generations, such as planting food forests and accepting lower yields during the transition period, tend to make regenerative food more expensive and therefore less accessible to lower-income groups today.

Neither of these conflicts is a problem that improved practice can resolve, rather they are ethical dilemmas. The first conflict suggests a structural flaw in the system: these tensions would not arise if farmers could sustain a viable income under lower productivity or with more fair compensation. This suggests that to address these conflicts, a structural change of the agricultural system is required and that this should not be an individual farmer trade-off. The second conflict points to a normative choice about whose interests and which time horizons should have priority. However, this still calls for policy instruments that help farmers and society navigate this dilemma more fairly.

With the value landscape mapped and some internal conflicts identified, I turned to the conditions that shape the landscape from the outside. Using the discourse analysis of agricultural policy documents and interviews with policymakers and a waterboard member, I examined how the institutional and technological conditions of the Zuid-Hollandse Delta mediate the value landscape of RA (SQ3).

At the institutional level, it was found that regenerative agriculture as a practice currently lacks institutional recognition within Dutch agricultural policy, with the exception of the ReGeNL project. In the discourses analysis of agricultural policy documents, it was revealed that the policy discourse does share several values with regenerative agriculture, most importantly care for nature, collaboration, and intergenerational justice. These represent potential entry points for improved engagement between policymakers and regenerative farmers. However, the discourse analysis revealed that values such as community and human fulfillment, which were prominent in practitioner texts and confirmed in the fieldwork, are mostly absent from policy documents. This suggests that policy does not yet recognise the full plural value landscape that regenerative farmers embody. This partial recognition is exemplified by how policy currently operates in practice: several farmers described how existing policies tend to apply a one-size-fits-all logic that burdens them with compliance costs and can penalise practices that do not fit predefined criteria. Underlying both of these issues seems to be a structural distance between policymakers and farmers, mediated through intermediaries such as LTO Noord, which means that the specific values and experiences of regenerative farmers are rarely directly present in the rooms where policy is shaped. More fundamentally, the interviews with farmers and a policymaker pointed to an economic system that, shaped by decades of Big Agro influence and organised around productivity and scale, appears to be misaligned with the plural value landscape that regenerative farmers embody. This suggests that the obstacles to a regenerative transition run deeper than policy procedures and design alone.

At the technological level, the findings suggest that the hydraulic infrastructure of the Delta operates according to a technofix logic, in which water management is treated as a problem of centralised control and engineering rather than local adaptation. This system embeds the values of physical human wellbeing, safety, and security. These values do not inherently conflict with the value landscape of RA. However, under the technofix, centralised logic through which they are enacted, conflicts can arise with two regenerative values: autonomy and context-sensitive care for the soil. Both can be constrained by a system that manages water levels system-wide and does not allow for farm-level adjustment. This was experienced by Farmer 3, but not by the other farmers, suggesting it is a localised, potential conflict rather than a generalised one. However, as climate change intensifies pressure on the Delta's hydraulic infrastructure (e.g. through more extreme rainfall, rising sea levels, and increasing saltwater intrusion),

these tensions could become more pressing, warranting a critical discussion among policymakers and water managers. That said, the findings also reveal a shared value: an instrumental care for the soil. However, this shared value has not been translated into shared practice: the waterboard benefits from regenerative practices without any mechanism to compensate farmers for delivering these public goods.

Taken together, this research has shown that the value landscape of regenerative agriculture in the Zuid-Hollandse Delta is irreducibly plural. It encompasses a wide range of moral values, shaped by the scale, worldview, and circumstances of each farm, but is anchored in one shared commitment: care for the soil. This plurality gives rise to internal value conflicts. Two were identified in this research: between economic viability and a broad set of regenerative values, and between intergenerational and intragenerational justice. These conflicts reflect the normative complexity of pursuing multiple values simultaneously, but also point towards structural conditions in the food system. This was reinforced by the findings on institutional conditions, which suggested that power structures continue prioritising productivity and efficiency, leaving many of the values that motivate regenerative farmers invisible and unrewarded. The hydraulic infrastructure, though currently manageable, embeds a logic of technofixing and centralised control that could increasingly constrain regenerative practice under future climate pressures. Through these findings and translating them into recommendations for policymakers (see Chapter 7), this research has made the complexity of regenerative agriculture in this context visible. In doing so, it takes a step towards the structural, procedural, and recognitional changes needed for a regenerative transition, one that the Netherlands, and the Zuid-Hollandse Delta in particular, requires on its path towards a future-proof and climate-neutral agricultural system.

8.2 Limitations

This research and its impact are constrained by several limitations. This section presents these limitations, the optional mitigation strategies applied, and the implications for how the findings should be interpreted.

8.2.1 Empirical scope

Several limitations emerged concerning the empirical scope of this research.

First of all, the empirical findings of this research are geographically bounded to the Zuid-Hollandse Delta. Three farms, interviews, and policy perspectives all come from this specific region. So, the conclusions drawn from them reflect the conditions, actors, and dynamics of that context. However, the discourse analysis is an exception to this. Because no sufficient body of regenerative agriculture documents exists specifically for the Delta region, it was conducted using Dutch practitioner publications, broader scientific literature, and policy documents on all levels of governance. This means the discourse analysis speaks to a wider context than the empirical fieldwork does.

The findings of this research should therefore be read as a contribution to regenerative agriculture research in the Zuid-Hollandse Delta, not as generalisable conclusions about regenerative agriculture more broadly. Since how regenerative agriculture is practised is context-specific, findings from one region cannot simply be transferred to another. Before broader conclusions about the value landscape of regenerative agriculture can be drawn, similar research is needed in other regions. This study should be seen as a first step in that direction, as an example of how value-oriented research can be conducted in a specific agricultural and delta context, which future studies can build on.

Another limitation is that one of the four farms visited is located outside the Zuid-Hollandse Delta. This introduces an inconsistency in the geographical scope. As mentioned in the methodology (Section 5.3.3), the farm was included because visiting a site outside the defined scope can encourage critical reflection on what is specific to the Delta context and on the assumptions the researcher holds towards that scope.

In practice, however, this did not fully materialise. Looking back at the findings, the four farms are

so different from one another that no distinction can be drawn on the basis of geographical location alone. There is nothing found across the three delta farms that was absent from Farm 4, nor anything unique to Farm 4 that was not also present elsewhere. Moreover, when designing the study, I assumed that the delta context would have an impact on the interaction between the farmer and the water system, as the water system is unique to this region. However, this dimension of the water system and its interactions with the farmer were not explored at all at Farm 4. This means that the inclusion of the farm could not actually contribute to testing or challenging that assumption. So, the reflective potential of including an out-of-scope farm was therefore not realised as intended. This could not have been anticipated in advance, but it is worth acknowledging.

To mitigate the inconsistency the inclusion of Farm 4 introduces, the findings from Farm 4 are used in a supporting manner only. They contribute to the broader picture of the regenerative value landscape but are not used for any conclusions regarding the interaction between regenerative agriculture and the specific hydraulic and institutional conditions specific to the Zuid-Hollandse Delta.

8.2.2 Partial representation of perspectives

A further limitation concerns the partial representation of perspectives through the limited representations of stakeholders in the research. The most noteworthy absence is the perspective of nature, which was not included as a voice in the research. The perspective of nature is actually especially relevant in a complex Socio-Technical-Ecological System such as the ZH Delta. Beyond this, other perspectives that are not represented include, for example, the perspectives of conventional farmers, surrounding community members, and food consumers. This is an unavoidable consequence of the time and scope of this research and limits the completeness of the picture.

This partial representation can also be found in the institutional perspective of this research, which is represented by only two policymakers, both of whom occupy relatively peripheral positions in agricultural governance. This is a consequence of the limited response to outreach and a lack of time. The result is that the analysis of the institutional influences is based on few empirical findings, possibly influencing the rigour of the conclusions. Furthermore, the recommendations for policy, while grounded in the empirical findings, are exploratory and generic. Translating these recommendations into concrete policy instruments requires more engagement with policymakers at national, provincial, and European levels, as well as with actors in the food chain such as retailers and financial institutions. The reader must be aware of these partial representations when reading and interpreting this work.

8.2.3 Methodological rigour

Employing a mixed-methods approach inevitably means that each individual method receives less time and effort than it would in a study focused on a single method. Two examples of how this limited the quality of the research are described below.

First, the analysis of interviews and observations relied on reading and interpretation by the researcher rather than a formal coding procedure such as thematic analysis. This introduces a greater potential for bias and reduces the reproducibility of the interpretive process. Awareness of this limitation is part of the reason why the data analysis and integration process has been described explicitly in Section 5.7 and in the results, and why the autoethnographic reflections document the researcher's positionality throughout the fieldwork.

Second, the discourse analysis, while validated repeatedly, would benefit from additional validation runs and larger samples for validation. As discussed in Section 5.2.3, the LLM-based extraction shows variation at the chunk-level across runs, and the findings should be interpreted as indicative rather than definitive. More validation is always better, and with more time this would have improved the trustworthiness of the results.

8.2.4 Use of LLM

The use of a Large Language Model in the discourse analysis has negative effects that are discussed in detail in Section 5.2.4, referring to both reproducibility concerns and the environmental and social impact of the technology. I explicitly acknowledge these limitations here again because they are an important limitation of this research design. The use of LLMs was justified by their contribution to the scope and depth of the discourse analysis, which would not have been achievable through manual methods within the available time.

8.2.5 Researcher positionality and bias

The participatory nature of this research means that researcher bias is an inherent feature of the work. In the fieldwork, the researcher's presence, choices about what to observe, and the nature of my interactions with farmers and volunteers all shape the data that was collected.

Not only in the data collection, also the analysis of the data is influenced by my positionality. The interpretation of values, conflicts, and patterns is steered by my worldview and prior knowledge. Despite mitigation through triangulation across methods and transparent documentation of the analytical process, certain viewpoints or conclusions may have been unintentionally prioritised. Another researcher working with the same data would likely have arrived at a partially different interpretation. So, the findings presented here represent one reading of the material, not an objective account. My positionality is made explicit in the positionality statement, as a means of enabling the reader to understand and critically evaluate the interpretive choices made throughout the research.

8.3 Future research and actions

From the findings, interpretations and limitations of this research, also emerge areas for future research, which are introduced in this section.

8.3.1 Future research

This work can function as a stepping stone for future research. The recommendations for future research presented in this section emerged from my experiences, the findings and limitations of this research.

Power structures in the agricultural system

An interesting finding to emerge from this research is the productivity logic within the agricultural system that conflicts with the regenerative value landscape and the role of power structures, particularly Big Agro, in sustaining this (Sections 6.2; 6.3). Yet, despite its apparent significance, it remains poorly understood. The values, motivations, and strategies of the powerful actors in the agricultural system, including large retailers, processors, the chemical industry, and financial institutions such as Rabobank, are largely absent from both this research and the wider scientific literature on regenerative agriculture.¹ This research can only point in the direction of these dynamics and cannot draw hard conclusions on them, as more empirical evidence is needed for that. Future research into the value orientations of these actors, and into the mechanisms through which they sustain productivist norms in the Dutch and Delta context seems urgent. Without this, the structural conditions that make a regenerative transition difficult will be hard to address.

Including missing voices

This research was limited by its inability to account for all stakeholders who play a role in regenerative agriculture in the Zuid-Hollandse Delta. As noted above, agro-industry or Big Agro actors were not included and future research should address this to simultaneously address the power structures gap

¹Despite some research on global power structures in agricultural systems existing, such as Conti et al. (2021), to the best of this author's knowledge little scientific research on these dynamics within the Dutch and specifically Zuid-Hollandse Delta and RA context exists.

identified above and bring a missing voice into the value landscape analysis.

Moreover, other perspectives were also missing, the most important of which is nature. It had no voice in this research, despite care for nature emerging as a central value. Future research should explore how more-than-human approaches might be integrated into value research in general, and specifically within regenerative agriculture. This would give nature a more active role as a stakeholder in normative discussions about what regenerative agriculture should be and do.

Expanding on autoethnography

An interesting and original, yet underdeveloped dimension of this research is the autoethnographic component. In the study of values, autoethnography has potential: values are experiential and relational, and embodied immersion in a practice can reveal dimensions that interviews and observations alone cannot access. A key prerequisite for this, however, is time, which was limited in this research. O'Connor et al. (2025) demonstrated what becomes possible with sustained presence, immersing herself in a farm for one year and produced interesting findings through autoethnography.

Future research could expand on this in two ways. First, a researcher who is also a regenerative farmer could conduct autoethnographic reflections from within their own practice, bringing an insider perspective that eliminates the access and positionality constraints that limited this study. Second, a researcher could follow the approach of O'Connor et al. (2025) and commit to an extended period of immersion on a farm in the Zuid-Hollandse Delta specifically, which would add the interesting dimension of how the hydraulic context is experienced in daily farming life. Both strategies have the potential to bring a more relational perspective on values, which the fieldwork in this research did not allow for.

The future of the technofix hydraulic system and its interactions with RA

This research identified a possible tension between the centralised, technofix logic of the Delta's hydraulic infrastructure and the value landscape of regenerative agriculture, particularly around autonomy and care for the soil. Beyond these specific conflicts, broader questions arise about whether the plural value landscape of regenerative agriculture is compatible with the technofix, centralised logic of the hydraulic system more generally. How water management, especially under intensifying climate pressures will interact with the plural character of regenerative farming remains an open and important question that should be further explored by research.

Moreover, the findings only scratch the surface of a much larger question: how future-proof is this system? The waterboard member himself was uncertain about the long-term sustainability of the Delta's water management model under climate change. Future research should examine this more deeply, including how the system might be made more compatible with regenerative farming values, and what alternatives to the technofix paradigm might look like in a context where millions of people and agricultural areas depend on the existing infrastructure.

Refining and operationalising the LLM-supported methodology

The combination of LLM-supported discourse analysis with empirical methods proved to be an interesting methodological approach in this research and one worth developing further. Future research could examine how to make this integration more systematic, for example by exploring how LLM-based findings can be more formally linked to and validated against empirical data from observations and interviews.

Beyond this integration, there is also scope for refinement in terms of the reliability and efficiency of the LLM methodology itself. An example of a future direction is the value extraction process, in which new values are identified from the text, which currently requires a great manual effort. Because the model does not consistently produce the same label for an underlying value across runs, the researcher must manually cluster and reconcile a large number of labels into categories. Future research could explore whether this can be made less time-intensive, for example, by developing a more constrained prompting strategy that limits the model's labelling vocabulary, or by automating the clustering step through semantic similarity matching. It is also possible that open-ended value discovery is simply

not well-suited to LLM-based extraction in its current form, in which case a pre-defined value list used from the outset, as was done in the extraction phase of this research, may be the more reliable application of the method. However, this conclusion should only be drawn after further research and (attempted) improvements.

Moreover, there is potential to explore how this approach could be operationalised for advocacy purposes, both within the specific context of regenerative agriculture and more broadly. For this to be meaningful, the methodology would need to be made accessible to those who need it most, usable without specialist technical knowledge, and flexible enough to be adapted to different use cases and desired outcomes. Further research is required to establish these goals.

Further directions

Several additional, more straightforward directions for future research follow from the findings and limitations of this study. First, since the findings of this research are geographically bounded to the Zuid-Hollandse Delta, comparable value-oriented research in other regions and agricultural contexts would allow for comparison and contribute to a more complete understanding of the value landscape of regenerative agriculture beyond the Delta. Second, this research identified two major value conflicts, but there are likely more, both within regenerative agriculture and within the broader agricultural system. Future research could build on the compound value framework developed here to examine additional conflicts. Third, the policy recommendations presented in Section 7.2 are exploratory and would benefit from deeper engagement with policymakers at all governance levels to develop concrete instruments, including mechanisms for farmer participation, context-tailored policymaking, and fair compensation systems for regenerative farmers.

Food for thought: Are research findings reaching those who need to hear them?

Inspired by discussions with my first supervisor and a presentation attended on design for values and decolonial justice perspectives, I want to raise a question that extends beyond this research alone: are we, as researchers, communicating our findings to the people who most need to hear them? A shortcoming of this research is that it takes the form of a written report that is unlikely to reach a wide audience, despite attempts to communicate through more than text alone, by including visual elements, photographs, sounds, and nature elements. However, this is not a problem unique to this thesis, but is a broader challenge within the scientific community. A wider range of communication methods, such as documentaries, games, pamphlets, or even more unconventional formats like theatre, could open up research findings to people who would otherwise remain unreachable. This is also reflected in the personal next steps described in Section 8.3.2.

8.3.2 Future actions

Despite its limitations, this thesis still holds the potential to be used as a meaningful step within the transition of our agricultural system towards a more sustainable and just one. Through my role as a researcher, I have made myself an agent of change within this system. In the research process, I have gained experiences, knowledge, connections, and a strong motivation to use this position. In this section, I present the actions I hope to take following this research. These actions may also serve as inspiration for anyone wishing to build on this project.

First, I would like to organise a stakeholder meeting, bringing together farmers, policymakers, and other actors encountered during this research around the table to discuss its findings and what can be learned from them. A central aim of this meeting would be to work towards a shared working definition of regenerative agriculture, and to take a first step in decreasing the distance between farmers and policymakers. If organising such a meeting proves not to be feasible, I will instead seek opportunities to present this work directly to policymakers at different levels of governance. The recommendation presented in Section 7.2.1 works this out a bit further.

Second, I want to return to the farmers who participated in this research and develop, together with them, a product based on this work that is practically useful to them, in whatever form that may take. Third, I hope to translate the results of this work into a more publicly accessible form, for example, through a blog, a short film, or a flyer, so that its findings can reach a wider audience beyond academia and policy.

AI Statement

This research has been executed in a time when the use of Artificial Intelligence is becoming more widespread, including in research. Although the use of AI can significantly improve research, it also comes with social and environmental impacts, as reflected upon in Section 5.2.4, and with possible threats to the authenticity and integrity of the work. Therefore, I want to be explicit about my use of AI.

Throughout this research, I have used chatGPT (February - April) and later Claude (April - July) to help improve my writing and to structure my thoughts (as a sparring partner). The scientific content, arguments, and interpretations within this research fully reflect my own understanding.

I have also used Claude to help me with the layout of this thesis, specifically with programming in LaTeX in Overleaf.

Furthermore, Cursor Agent, in the programming software Cursor, has been used to help with coding. It helped me translate my ideas into Python code and significantly sped up the coding process. As mentioned in the methodology, Chapter 5, Gemini was used for the LLM-supported value extraction.

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A | Appendix A: Stakeholder Analysis

A.1 Stakeholder analysis

In this section, the most important stakeholders are introduced in detail. They are presented starting with the core actors directly involved in regenerative agriculture (farmers, nature and society), followed by supporting and network actors, market and financial actors, and finally the different levels of governance shaping the institutional context.

A.1.1 Regenerative farmers

The most important stakeholder is the RA farmers themselves. These are the primary actors implementing regenerative agriculture practices in the Zuid-Hollandse Delta. They make day-to-day decisions on land management, soil practices, crop rotations, and biodiversity measures. There is no estimation of the number of farmers practising regenerative agriculture within the ZH Delta, but it is a small pioneering community.

A.1.2 Nature

Nonhuman nature is an essential stakeholder here. It provides all resources and ecosystem services necessary for practising (regenerative) agriculture. Some essential elements it offers are freshwater, (healthy) soil, and biodiversity. It also offers many other forms of value to both the farmers and the larger community living within the ZH Delta, such as aesthetic, recreational and relational value. Furthermore, regenerating nature can be one of the core ambitions of RA farmers. Two important parts of this stakeholder are introduced below.

Natura 2000

Natura 2000 is a European network of protected natural areas, established under EU law to safeguard biodiversity and preserve habitats of European significance. The Zuid-Holland Delta hosts several such areas, including the Haringvliet, the Voordelta, and the Duinen Goeree en Kwade Hoek, reflecting its ecological importance as a transition zone between rivers and the North Sea (Ministerie van Landbouw, Visserij, Voedselzekerheid en Natuur, n.d.). Agricultural practices in the surrounding area put pressure on these protected zones through nutrient runoff, pesticide use, and hydrological interventions.

Boerennatuur

BoerenNatuur is a Dutch organisation representing agricultural collectives that work at the intersection of farming and nature management. It acts as an intermediary between farmers, governments, and environmental organisations, supporting and incentivising farmers to integrate biodiversity, landscape management, soil health, and water and climate considerations into their practices, while ensuring this remains economically viable (BoerenNatuur, 2025).

A.1.3 Society

A.1.4 Consumers

The most directly involved societal actors are food consumers, particularly those who buy regenerative products. Their willingness to pay a higher price for regenerative products gives them market power, shaping the economic conditions under which regenerative farmers can operate.

Residents

Residents of the Zuid-Holland Delta are also relevant stakeholders, as the physical landscape in which they live is largely shaped by agricultural land use. The region has a strong farming identity, with the islands in particular characterised by landscapes that are historically and visually dominated by farms (**appendix:policy1**; **appendix:policy2**). Residents can also interact directly with regenerative farms, for instance through workshops or community spaces that some farmers organise as part of their practice.

Media

The media plays an important role in shaping public perceptions of agriculture and regenerative practices in particular. In the Netherlands, the agricultural sector has been the subject of intense and often polarised public debate, which influences how farming practices are perceived by consumers, policymakers, and the broader public (KRO-NCRV, 2018). The media, therefore, acts as an indirect but influential force in the system.

A.1.5 Cooperatives

As RA is still an emerging practice, community formation is especially important. These cooperatives and networks can support RA farmers through knowledge exchange, joint marketing, shared learning, and collective representation. Examples are Lenteland, a cooperative that helps (aspiring) regenerative farmers with advice, action and finance (Lenteland, n.d.).

An important regional actor in this category is: Rotterdam de boer op!, which is a regional initiative that aims to transform the food system around Rotterdam by strengthening the connection between agriculture, nature, and urban consumption. It brings together a broad range of actors like farmers, nature organisations, businesses, governments, and consumers. The initiative focuses on enabling farmers to transition towards more sustainable practices while simultaneously stimulating market demand through consumer awareness and supply chain collaboration (Rotterdam de boer op, n.d.).

A.1.6 ReGeNL

ReGeNL is a national regenerative agriculture network that supports the transition towards regenerative practices by connecting farmers, researchers, businesses and policymakers, and by facilitating pilot projects and knowledge development. It is a programme funded by the Dutch government, through the Nationaal Groenfonds (National Greenfund), and it has been initiated by the Dutch ministry LNV. It has 54 partners, among which: farmer cooperatives and networks (e.g. boerennatuur, wijland, and boakkerbouw), Regional stakeholders and collectives (Vitens, national park Utrechtse Heuvelrug, and Agro agenda), supply chain partners and networks of supply chain partners (e.g. Unilever, Verstegen, and Foodvalley), financial institutions (e.g. Rabobank, ABN AMRO, and Urgenda), suppliers of knowledge and technology (e.g. Lely, soil data, and de boeren academie), knowledge institutes (e.g. Wageningen university, Utrecht University, van hall larenstein, and terra mbo) and some other parties (e.g. fascinating, spark and circular Friesland) (ReGeNL, n.d.).

A.1.7 Knowledge institutes

Since regenerative agriculture is an emerging field, knowledge institutes play an important role in researching its potential and accelerating development through scientific studies and an advisory role. They also hold quite some power in their signalling role. Within the Netherlands Wageningen University and Research is the most important and active knowledge institute focused on RA (Wageningen University & Research, n.d.).

A.1.8 Business sector

Big Agro

'Big Agro' is a term that refers to the agro-industry. It entails the network of large multinational companies that dominate the agricultural supply chain from inputs to processing and distribution. The sector can be divided into several main groups. First, seed and crop protection companies produce genetically modified seeds, synthetic fertilisers, and pesticides. Second, commodity traders, the so-called ABCCD companies, buy, process, and trade grains and other raw materials on a global scale. Third, animal feed and meat processing giants, these are less relevant here as they are mostly part of the animal system. Finally, financial actors such as Rabobank play a role by selectively financing capital-intensive agricultural operations (Bronkhorst, 2024). Because these companies control key parts of the supply chain, including inputs, financing, and market access, they have big influence over prices, production standards, and contract terms. This often pressures farmers to produce at scale and at low cost, creating dependency on chemical inputs and conventional production methods. Farmers seeking to transition to regenerative practices risk losing income, contracts, or financial support, inhibiting their ability to change (Bronkhorst, 2024).

Food industry apart from Big Agro

Some regenerative farmers bypass the conventional supply chain by using shorter, more localised distribution models. Rather than selling to large processors or retailers, they sell directly to consumers or through small intermediaries such as farm shops, local food initiatives, vegetable box schemes, or alternative distribution platforms like boerschappen. These channels give farmers greater control over pricing and production standards, and connect them directly with consumers who are willing to pay for regeneratively produced food.

Industry

Part of the port of Rotterdam is located within the Zuid-Hollandse Delta. Industrial activities, including those linked to the Port of Rotterdam, degrade soil and water quality through pollutants such as PFAS, and plastics, harming ecosystems and human health (Passier, n.d.).

Conventional farmers

Conventional or traditional farmers form competition for RA farmers. However, they also provide opportunities for collaboration and to be inspired by RA farmers. The exact numbers for the ZH Delta are not available, but the whole province of Zuid-Holland counts more than 4000 agricultural and horticultural companies (Van Ruiten et al., 2024).

Farmers trade and advocacy associations

Farmers' trade and advocacy associations represent the economic, social, and political interests of agricultural entrepreneurs in the Netherlands (Rijksdienst voor Ondernemend Nederland, n.d.). These organisations act as intermediaries between farmers and policymakers, lobbying for a favourable entrepreneurial climate at local, national, and European levels on themes such as the Common Agricultural Policy (CAP), nitrogen regulations, and water quality. The most prominent of these is LTO Nederland, which represents approximately 35,000 Dutch farmers and horticulturalists. Its regional branch LTO Noord is active for Zuid-Holland (LTO Nederland, n.d.).

Healthcare sector

The healthcare sector, including hospitals, insurers, and the pharmaceutical industry, is a stakeholder due to the links between farming practices and human health. Agriculture produces food and thus is essential for nutrition and physical wellbeing (Hawkes & Ruel, 2006). However, conventional agricultural practices have decreased soil fertility and quality, due to which nutrients and vitamins in vegetables and fruits have been reduced (O'Ree, 2023). Other health risks include pesticide poisoning, waterborne and foodborne diseases, and zoonotic diseases transmitted from livestock to humans (Hawkes & Ruel, 2006). Regenerative practices, by possibly improving food quality, reducing chemical

exposure, and creating healthier ecosystems, have the potential to positively influence these health outcomes, giving the healthcare sector a stake within this system.

Agricultural consultancies

Agricultural consultancies are as advisory partners for farming businesses, offering advice in financial planning, regulatory compliance, and strategic business development. Given the complexity and continuous evolution of the agricultural sector, such consultancies play an important role in supporting farmers (Het Ondernemersbelang, 2024).

Because many farmers rely heavily on their consultants, these organisations hold power over farming decisions and the direction of the farm. No consultancies appear to exist that specialise specifically in regenerative agriculture, meaning that farmers pursuing a regenerative transition must currently rely on advisors whose expertise is primarily oriented towards conventional farming systems or need to rather knowledge by themselves.

A.1.9 Nationaal Groenfonds

An important financial actor in this context is Nationaal Groenfonds, which provides loans ranging from 200 000 euro to 5 000 000 euro for green projects, including regenerative agriculture, through its Revolving Fund (Nationaal Groenfonds, 2022). It also coordinates funding programmes on behalf of other parties, including the Investeringsfonds Duurzame Landbouw (IDL), which supports farmers transitioning towards more sustainable farm management as part of the Ministry of LNV's Omschakelprogramma Duurzame Landbouw. Additionally, Nationaal Groenfonds has allocated 129 million euro to the ReGeNL programme (ReGeNL, 2023).

A.1.10 Landowners

More than 25% of the agricultural area is not owner by the farmers, rather it is leased from large landowners. An example of such a large land owner is the insurance company ASR (ASR, n.d.). These landowners can provide criteria to the farmers for the use of their land, also in terms of sustainable use of land and farm. However, this also creates obstacles, especially for new farmers. Farmers that are new and do not come from an agricultural family do not own any land. Agricultural land in the Netherlands is very scarce and expensive, so buying is often not an option. Therefore, the owners have to lease the land. Much of this lease is temporary (90% is <6 years), creating many insecurities for the farmers and making investments into sustainability or regenerative soil use difficult as these often require timescales of at least 10 years (Dinther, 2022).

There are also initiatives like 'Land van Ons'. This is a Dutch cooperative in which citizens collectively buy agricultural land to remove it from the speculative market, to improve biodiversity and landscape quality, and to produce sustainable food. The land is then leased to farmers under conditions that promote nature-inclusive or regenerative agriculture (Land van Ons, n.d.).

A.1.11 European Union

The European Union (EU) is responsible for the development and implementation of the Common Agricultural Policy (CAP) (in Dutch: Gemeenschappelijk Landbouwbeleid, GLB). The CAP aims to support Europe's agricultural sector through income support, market measures, and rural development instruments, whereby national and regional programmes address context-specific needs Directorate-General for Agriculture and Rural Development, 2026.

Beyond its regulatory role, the EU is also an important financial actor in agricultural transitions. Through the CAP and the European Agricultural Fund for Rural Development (EAFRD, Europees Landbouwfonds voor Plattelandsontwikkeling, ELFPO), the EU co-finances Rural Development Programmes (Plattelandsontwikkelingsprogramma, POP3). Approximately half of the total POP3 budget (around €1.6 billion between 2014 and 2020) originated from European funds. These resources are distributed through national and provincial authorities (Van Der Meulen et al., 2020).

LEADER projects

The LEADER Zuid-Hollandse Eilanden project is part of a European subsidy program aimed at strengthening rural areas through bottom-up development. It brings together local stakeholders, including residents, farmers, entrepreneurs, and governments, to support initiatives that enhance the vitality of the region. The program focuses on themes such as agricultural innovation, sustainable landscapes, and rural livability, and provides funding, guidance, and networking opportunities for local projects (LEADER, n.d.).

A.1.12 National government

Ministry of Agriculture, Fisheries, Food Security and Nature (LVVN)

The national government, primarily through the Ministry of Agriculture, Fisheries, Food Security and Nature (LVVN), is responsible for developing and implementing national agricultural policy, for example including nitrogen regulations and sustainability strategies. The national government is also responsible for supervision and oversight, for example with regard to food quality and compliance with environmental standards.

These policies operate within the framework of the European CAP, but are translated into national objectives, instruments, and enforcement mechanisms. The LVVN is responsible for national schemes, the coordination of the CAP (GLB) and the Rural Development Programme (POP3). It contributes to financing sustainable investments through instruments such as the SME Agricultural Credit Guarantee Scheme (Borgstelling MKB-landbouwkredieten) (Van Der Meulen et al., 2020).

Rijksdienst voor Ondernemend Nederland (RVO)

European agricultural financing for the Netherlands is almost always channelled through the national government, primarily through the Rijksdienst voor Ondernemend Nederland (RVO). While the European Union determines the overarching framework of the CAP, the implementation, control, and disbursement of subsidies to farmers are carried out by national authorities such as the RVO (Ministerie van Economische Zaken en Klimaat, n.d.).

Rijkswaterstaat

Rijkswaterstaat (RWS) is the executive body of the Ministry of Infrastructure and Water Management, responsible for managing the Netherlands' primary water system, including water quantity, quality, and flood protection (Ministerie van Financiën, 2018). For regenerative farmers, RWS is a relevant actor because its management of water levels, freshwater availability, and water quality directly affects the hydrological conditions on which farming depends.

A.1.13 Regional government

Provinces

Provinces, in this case Zuid-Holland, implement national policies at the regional level and develop additional region-specific policies. In the agricultural domain, this includes responsibilities for spatial planning, balancing farming with nature conservation, industry, and recreation, and overseeing environmental quality of soil, water, and air (Koninkrijksrelaties, 2012a).

They are responsible for implementing POP3 measures and managing various additional subsidies and loan schemes aimed at supporting innovation, sustainability, and farm transitions. Provinces assess subsidy applications, determine funding ceilings, and implement subsidy programmes in cooperation with the national government and other partners (Van Der Meulen et al., 2020).

Provinces form the governmental body that (regenerative) farmers are most in contact with.

Water board Hollandse Delta

Where RWS is responsible for the maintenance of the large water systems in the Netherlands, water boards (Waterschap) are responsible for local execution. Waterschap Hollandse Delta is responsible for ensuring sufficient and clean surface water across the South Holland islands, including Goeree-Overflakkee, Hoeksche Waard, and Voorne-Putten. Its core responsibilities include regulating water

levels, maintaining water quality, managing flood protection through over 800 kilometres of dykes and dunes, and overseeing wastewater treatment (Waterschap Hollandse Delta, n.d.).

The waterboard is a very relevant actor for regenerative farmers. Through its management of ditches, water levels, and ecological zones, it directly shapes the hydrological and ecological conditions of the agricultural landscape (Waterschap Hollandse Delta, n.d.). Therefore, the waterboard's decisions on water management have a direct effect on what farming practices are feasible.

Regio Zuid-Hollandse Delta

Regio Zuid-Hollandse Delta is a collaboration between the five islands in the south west of Zuid-Hollands (Goeree-Overflakkee, Hoeksche Waard, Voorne-Putten, IJsselmonde en Eiland van Dordrecht). It unites the municipalities, the Province of South Holland, and important regional partners such as Waterschap Hollandse Delta across the five South Holland islands (Regio Zuid-Hollandse Delta, n.d.). Through a Regio Deal running from 2025 to 2028, the institute implements programmes on economy, landscape, quality of life, and collaboration. Several of these programmes interact directly with regenerative agriculture: the economy programme supports projects on innovation and sustainability in farming. The landscape programme tries to strengthen the balance between ecology, water, and agriculture through measures such as improving water quality and biodiversity (Regio Zuid-Hollandse Delta, n.d.).

A.1.14 Municipalities

Municipalities are responsible for implementing national rules at the local scale and shaping local policy. In agriculture, they regulate land use through zoning and local plans, issue permits, and manage how agricultural areas interact with residential, natural and commercial zones (Koninkrijksrelaties, 2012b).

A.1.15 Agrarische beoordelingscommissie

The Agrarische Beoordelingscommissie (ABC, Agricultural Assessment Committee) is an independent advisory body that advises municipalities and other public authorities on spatial planning, permit applications, and the status of agricultural businesses. Its core tasks include assessing whether a farming operation is a viable commercial enterprise, advising on permits for agricultural construction, and supporting municipalities in zoning decisions. The ABC operates exclusively on behalf of public authorities and does not do commercial assignments from private parties or farmers to maintain its independence. Although it holds no decision-making authority itself, its assessments carry weight in shaping the regulatory environment within which farmers operate (Agrarische Beoordelings Commissie, n.d.).

B | Appendix B: Discourse Analysis

B.1 Scientific documents

B.1.1 Selection procedure

First, a search was conducted in both WoS and Scopus to identify publications explicitly addressing regenerative agriculture in the Netherlands using the query:

("regenerat* agri*" OR "regenerat* farm*" OR "regenerat* agro*" OR "regenerat* land*" OR "regenerat* graz*") AND (Netherlands OR Nederland OR Dutch OR Holland)

This search returned 11 results in Scopus and 9 results in Web of Science. Titles and abstracts were screened manually. Articles were excluded if they were unrelated to regenerative agriculture or the Netherlands, or were duplicates across databases. This resulted in four relevant publications.

To better capture literature relevant to the specific environmental characteristics of the Zuid-Hollandse Delta and similar landscapes, a second search query was conducted focusing on coastal and delta systems. These landscapes are relevant because they are strongly shaped by water dynamics, salinity, flooding risks, and human water management, just like the Dutch Delta. The following search query was used:

("regenerat* agri*" OR "regenerat* farm*" OR "regenerat* agro*" OR "regenerat* land*" OR "regenerat* graz*") AND (delta* OR "river delta" OR "coastal delta" OR floodplain OR "flood-prone" OR estuary OR estuarine OR "low-lying" OR coast*)

This query resulted in 19 publications in Scopus and 29 publications in Web of Science. Articles were excluded if they were unrelated to regenerative agriculture, outside the relevant geographical context, or duplicates.

After screening, three relevant articles from Scopus were retained and one additional article from Web of Science, resulting in a total of four publications focusing on regenerative agriculture in coastal or delta environments.

A third query was used, focusing on the North-West European context in order to capture literature relevant to comparable agro-ecological and socio-political settings:

("regenerat* agri*" OR "regenerat* farm*" OR "regenerat* agro*" OR "regenerat* land*" OR "regenerat* graz*") AND ("Northwest Europe" OR Benelux OR Netherlands OR Belgium OR Germany OR Denmark OR "United Kingdom" OR Ireland)

This query yielded 37 results in Scopus and 160 results in Web of Science. Titles and abstracts were again screened manually. Articles were excluded if they were unrelated to regenerative agriculture, outside the geographic scope, or duplicates. After screening, 29 additional publications were retained. During this process, two additional types of exclusion criteria were applied. First, some publications focused on aquaculture or marine systems rather than land-based agriculture and were therefore excluded. Second, articles focusing only on a single regenerative practice (e.g. cover crops or reduced tillage) without addressing regenerative agriculture as a broader system or concept were excluded, as the research focuses on regenerative agriculture as an overarching approach.

Third, a manual review of the literature already identified during the earlier literature review phase was conducted. From this review, five additional publications were added because they provided particularly relevant conceptual or review perspectives on regenerative agriculture.

Finally, two reports produced by Wageningen Economic Research were included. These reports were selected because they provide in-depth analysis of regenerative agriculture initiatives and economic models within the Dutch context and therefore complement the academic literature.

B.1.2 List of scientific documents

A link to the excel sheet containing all documents can be found [here](#).

B.2 Practitioner documents

B.2.1 Selection procedure

To establish this set of documents, the following procedure was followed:

1. Relevant websites were identified using Google with the following Dutch search query: (regeneratie OR regeneratief OR regeneratieve) AND (landbouw OR boer OR boeren OR voedsel). After exhausting these results, the following additional query was used: visie regeneratieve boer filetype:pdf.
2. The identified websites were manually screened in order of appearance. For each website, one downloadable PDF publication explicitly addressing regenerative agriculture was selected. The focus was on practitioner publications (e.g. reports, vision documents, practical guides, or position papers) authored by actors directly involved in practice. If a website contained more than one eligible document, the most relevant document, based on the author's assessment of its focus on regenerative agriculture, was selected. In cases where multiple documents were equally relevant, the most recent version was chosen.
3. Snowball sampling was applied where relevant. When a website referred to other practitioners or organisations, these sources were also examined for eligible documents. Documents were included if they:
 - Were produced by practitioner-oriented organisations (e.g. farmers' organisations, NGOs, foundations, networks, advisory bodies, or practice-oriented projects)
 - Explicitly addressed regenerative agriculture in a farming or food-system context
 - Focused on practice, implementation, guidance, or communication rather than academic research
 - Were available as full-text PDFs

Documents were excluded if they:

- Were peer-reviewed academic articles
 - Consisted solely of commercial marketing materials
 - Did not substantially address regenerative agriculture in a farming or food-system context
 - Were duplicates or very short documents (e.g. flyers or one-page brochures)
4. This process was continued until a corpus of 17 practitioner documents (PDFs) had been compiled and downloaded.

The document 'STICHTING GROND VERBOND BELEIDSPLAN 2023-2024' consisted of a scanned PDF, meaning it contained no extractable text. Therefore, it was taken out of the analysis and the final analysis consisted of 16 documents.

This document collection has several limitations. First, as regenerative agriculture is still an emerging field, the number of available publications is limited, and the existing documents vary considerably in scope and format. Second, many initiatives in this field involve governmental actors (such as ReGeNI), corporate funding, or knowledge institutions. As a result, it is difficult to determine whether these documents represent purely practitioner-driven perspectives. Finally, the term regenerative agriculture is not legally protected, unlike, for example, organic agriculture Yvet Dikken, 2025. Consequently, the term can be used freely, which complicates the identification and selection of actors who actively practice regenerative agriculture.

B.2.2 List of practitioner documents

A link to the excel sheet containing all documents can be found [here](#). The documents have been categorised in subcategories.

B.3 Policy documents

B.3.1 Selection procedure

- **Local:** For each municipality, the documents were identified through a Google search using the query “[name of municipality] landbouw filetype:pdf”, which led to a list of documents. For each municipality the most relevant document was selected if it indeed concerned agricultural policy and was recently published by the municipality.
- **Regional:** The documents were identified through a Google search using the query “zuid-holland landbouw filetype:pdf”, which led to a list of documents. After a quick scan of each document, the author decided to include the document if it indeed concerns agricultural policy, was indeed published by the province and if it is not older than 20 years.
- **National:** The documents were identified through a Google search using the query “kamerstukken landbouw”, which led to relevant parliamentary publications hosted on official government websites. After a quick scan of each document, the author decided to include the document if it indeed concerns agricultural policy and if it is not older than 15 years.
- **European:** The author scanned the website of the EU on which the CAP is explained and identified the most relevant document.

B.4 Model

The model can be found at the 4TU Repository under the DOI: 10.4121/481f487a-e3aa-48d1-9ddb-59c29ae2d097. It is titled: Discourse Analysis Values in Regenerative Agriculture Documents.

B.5 Initial value list

The initial value list with definitions and keywords used in the analysis is presented below.

- **Care for nature:** The responsibility to respect, protect, preserve, and restore ecosystems, plants, and animals. It emphasizes active stewardship, viewing nature as more than a resource, tending to nature’s needs, and recognizing emotions such as empathy and care as legitimate drivers for environmental protection.
Key words: nature, stewardship, protection, preservation, ecological integrity, biodiversity, intrinsic value of nature, guardianship, harmony with nature, conservation, environmental ethics, ecological responsibility, care ethics, respect, rights for nature.
- **Intergenerational justice:** The responsibility of current generations to ensure that future generations can meet their needs through sustaining ecological, social, economic, and institutional conditions. It concerns the fair distribution of goods, risks, and opportunities across generations and long-term responsibility.
Key words: future, future generations, long-term, long-term governance, sustainability, precautionary principle, long-term thinking, planetary boundaries, durable prosperity, future visions, inheritance.
- **Intragenerational justice:** Fair access to opportunities, resources, and decision-making for all people living today, regardless of geography or social position. It includes global solidarity and equitable distribution within the present generation.
Key words: power, inclusion, global justice, responsible sourcing, beyond borders, social justice, representation, recognition, human rights, access, participation.

- *Secondary key words for inter- and intrageneration justice:* duties (what we owe), responsibility, owing, equity, equality, distributive justice, redistribution, fair distribution.
- **Positive relationality:** The moral commitment to recognize and sustain relationships of mutual care, respect, and balanced exchange between humans and/or non-human beings. It emphasizes interdependence and the responsibility to respond to benefits received with contribution and care.
Key words: reciprocity, giving back, mutual benefit, relational accountability, trust, gratitude, gifting, symbiosis, balance, mutual care, solidarity, interdependence, respect, partnership, stewardship.
- **Relationality tension:** The moral concern that relationships between humans and/or non-human beings are characterized by imbalance, domination, or exploitation. It highlights the violation of mutual respect and the presence of extractive, harmful, or unjust interactions.
Key words: exploitation, domination, extraction, dispossession, instrumentalization, inequitable exchange, broken trust, neglect, harm, imbalance, overuse, dependency, marginalization, relational injustice.
- **Restoration:** The moral responsibility to actively repair and revive ecological, social, or relational systems that have been harmed. It emphasizes recovery, remediation, and making amends for past damage.
Key words: repair, remediation, remediation of the soil, rehabilitation, recovery, compensation, reconciliation, healing, renewal, reparation, ecosystem restoration, revival, corrective action, rebuilding, repair of harm, healing the soil, recovery of soil biodiversity.
- **Sense of place:** The meaning that emerges from an emotional, cultural, or identity-based connection to a physical environment across spatial scales. It reflects attachment, belonging, and identification with land and community.
Key words: land, belonging, place attachment, cultural identity, homeland, ancestral land, rootedness, landscape identity, community connection, feeling at home, territorial connection, spatial identity, emotional attachment, local knowledge.

B.6 Design choices per usecase

Several design choices were made in the model to ensure reliable, consistent, and interpretable outputs. These choices are described below for each phase of the use cases (discover and extract).

Discover values

- **Allowing zero values to be extracted**
Not every text segment contains a value, so the model is allowed to return no values when none are clearly present.
- **1-8 keywords per value**
Each value must be supported by a small set of keywords that help trace the value back to the source text.
- **Keywords must appear literally in the text**
Keywords must be taken literally from the text to reduce hallucination and maintain traceability.
- **Only extract truly new values**
The model should avoid repeating previously identified values and focus only on values that are new.
- **Preference for high-confidence values**
The model should prioritise values that are clearly supported by the text rather than uncertain or speculative interpretations.

Extract values (use cases 2-3)

- **No maximum number of values identified per chunk**
Allowing multiple relevant values to be identified in a single text segment.

- **No maximum number of norms per value**
Allowing multiple relevant norms to be identified.
- **Number of practices per norm = 0–3**
Allowing a small range of practices helps capture practical actions while preventing overly long or unfocused lists.

B.7 Scripts

The discourse analysis pipeline consists of eight Python scripts. Scripts 01-02 are the pre-processing, script 03 is the analysis, and scripts 04–08 are validation, reporting, and reproducibility checks on the outputs of script 03. In practice, the workflow was: (1) 01_raw_to_paragraph.py, (2) 02_paragraph_to_chunk.py, (3) 05_validation.py (repeated until prompt deemed good enough by author), (4) 03_analysis.py for each use case, (5) 07_analyze_results.py or 06_processing_discover_values.py for outputs and (6) 08_reproducibility_check for a final reproducibility. Scripts 04_report_analysis_results was only run to generate intermediate results before processing. Below, each script and its most important modelling choices are introduced.

B.7.1 01_raw_to_paragraph.py

This script converts each 'raw' (unprocessed) PDF into a JSON file of parsed paragraphs.

First, it opens the PDF, checks if there is enough embedded text (20 words) and skips files with too little text.

Then, it extracts text blocks with the Python library PyMuPDF, drops small/number-only blocks, merges neighbouring blocks into paragraphs based on sentence-ending heuristics, and splits paragraphs on blank lines.

It assigns each paragraph an ID and wordcount, and saves everything (plus metadata like page counts) as one JSON per PDF.

The modelling choices are:

- **The minimum embedded text to process a PDF is 20 words**
PDFs with fewer than 20 embedded words (across the first up to 10 pages) are skipped entirely. This filters out scanned PDFs that do not contain any readable text.
- **A text block is dropped if the length of the text < 3 or if it consists solely of digits.**
Text blocks with dates or page numbers are filtered out using these rules, as they do not contain any relevant information.
- **Paragraph metadata = paragraph ID and word count**
Storing this metadata allows for traceability.
- **Paragraph splitting** Blocks are merged into paragraphs using a sentence-ending heuristic: if the previous block does not end with ".!?", the next block is appended to the same paragraph (with a space). Otherwise a new paragraph is started. Paragraphs are also split on blank lines within the paragraph.

B.7.2 02_paragraph_to_chunk.py

This script groups paragraphs into word-count-based chunks. Creating larger text blocks (chunks) is necessary because context is very important to capture semantic meanings.

First it reads each paragraph JSON, and turns each paragraph into "units"; paragraphs longer than the maximum number of words are split by sentences into smaller units.

Then, it groups units into chunks aiming for the target amount of words, never exceeding the maximum number of words, and discarding very small chunks below the minimum number of words.

For each chunk the following metadata is stored: ID, paragraph IDs (which original paragraphs it came from), text, and word count.

The modelling choices are:

- **Chunk size (by word count)**

The chunking parameters use the following defaults (overridable via CLI): `-target-words = 300` (preferred chunk size), `-max-words = 400` (hard maximum per chunk), and `-min-words = 80` (minimum size to retain a chunk). Smaller leftover chunks are dropped.

- **Splitting large paragraphs**

Paragraphs with `word_count > max_words` are split into sentence-based units. Sentences are identified by checking whether the last character is `[!?.]`.

- **Overlap**

A parameter that allows overlap between paragraphs exists, but is set to 0 by default, meaning that overlap between chunks is not allowed.

- **Chunk metadata**

Each chunk stores the following metadata: a chunk ID, a list of contributing paragraph IDs, the chunk text, and the word count. Storing this metadata allows for traceability and easier analysis later on.

B.7.3 03_analysis.py

This script runs the LLM over all chunk files for a given use case and returns structured analysis JSON files. So, it returns the raw output of the analyses.

First it loads the YAML configuration for the usecase, including the relevant discourses, prompt version, and output schema.

Then, it filters the chunk JSON files so that only files whose discourse is included in the configuration are processed, after which it calls Gemini for each chunk.

All processed chunks are put into an analysis JSON containing run metadata, the PDF ID, source path, inferred discourse, and a list of chunks with their chunk ID, paragraph IDs, text, word count, and analysis object or an error marker.

The modelling choices are:

- **Concurrency**

To control processing speed and avoid overload, the script uses a per-file chunk concurrency of 30 and a per-run document concurrency of 5.

- **Use case argument**

The `-usecase` argument selects the right configuration file. This configuration defines the list of discourses to include, the prompt version, and the output schema.

- **Chunk filtering by discourse**

Only chunk JSON files whose discourse, derived from the first folder segment, is included in the configured list of discourses are processed. This ensures that the analysis is restricted to the selected subset of documents relevant to the use case.

- **Analysis output structure**

Each analysis output stores run metadata, the PDF ID, source path, inferred discourse, and a list of chunks. For each chunk, the stored fields are chunk ID, paragraph IDs, text, word count, and the resulting analysis object or an error marker. Storing this metadata allows for traceability and easier analysis later on.

B.7.4 04_report_analysis_results.py

This script builds a single HTML or Markdown report from completed analysis JSON files for manual review.

It scans the output, optionally filters by discourse or document limit, and writes one consolidated file listing documents, chunk text previews, and extracted fields per use case.

There are no important modelling choices, as this script has not been used for the analysis.

B.7.5 05_validation.py

This script samples random chunks from a given configuration's analysis output and builds a small HTML validation report. This report can then be used to validate output and improve prompts.

First it takes the use case and loads all matching analysis JSON files.

Then, it keeps only documents whose discourse is allowed by the configuration. After, it flattens all chunks into a single list of candidate chunks.

Finally, it randomly samples a specified number of chunks and writes one HTML file that shows, for each sampled chunk, the full text in collapsible form together with a per-use case table of the extracted values and fields.

The modelling choices are:

- **File + discourse filtering**

The script only keeps documents whose discourse is included in the discourses specified in the configuration. If the optional `-discourse` argument is provided, only documents with a discourse exactly matching this value are retained.

- **Sampling**

All chunks from the selected analysis documents are flattened into one candidate list. From this list, the script samples `n` chunks (default is 10). An optional `-seed` parameter can be used to make the random sampling reproducible.

B.7.6 06_processing_discover_values.py

This script processes outputs from the 'discover_values' usecase. It reads all suggested value labels returned by the model across chunks and documents. The values are then standardised (case, punctuation, spacing) and merged when they are identical after normalisation. Remaining values with high string similarity are then grouped into near-duplicate clusters. An optional synonym map (YAML) can then be applied to merge labels to a canonical list.

Results are written as CSV tables and a summary JSON.

The modelling choices are:

- **Optional relevance filter**

With '`-only-regen-related`', only chunks where `is_regen_related=true` are included.

- **Near-duplicate detection (token + character overlap)**

After exact merging on normalised names, pairs of distinct labels are scored by a weighted combination of token Jaccard similarity and character trigram Jaccard similarity (0.7 and 0.3 respectively). Pairs above a threshold of 0.5 (default is 0.86) are grouped into clusters.

- **Optional synonym map**

If '`-synonyms`' is provided, the normalised names are mapped to canonical names from the manually created synonym map, and occurrence counts are recomputed.

B.7.7 07_analyze_results.py

This script analyses the JSONs from both use cases, applies relevance filters (`is_regen_related` for practitioners and scientific literature, `is_agriculture_related` for policy) and creates the final outputs. Outputs include discourse analyses (value tiles, concern vs promise tables, subgroup and cross-discourse heatmaps), HTML evidence browsers per discourse, a norms-and-practices overview, audience summaries, and promise-only co-occurrence matrices plus a top-3 co-occurrence list.

The most important modelling choices are:

- **Chunk-based prevalence**

A value is counted in a chunk if it appears at least once in that chunk. Percentages are then shares of chunks that have the value. So, a value appearing multiple times in a chunk only counts once.

- **Version pairing**

The script is run with explicit analysis versions, for example v8 for `extract_values`, so it is ensured that results refer to the validated prompt versions used.

B.7.8 08_reproducibility_check

This script assesses the reproducibility of the LLM extraction by comparing repeated runs on the same small, fixed sample of documents.

It either triggers three separate runs of `03_analysis.py` (each saved under a different output tag: `run1`, `run2`, `run3`).

Each repeat uses test-run mode, a maximum of two documents per discourse, random sampling, and a fixed seed so that the same documents and chunks are analysed three times under the same prompt and schema version.

For each run, every chunk in the sample is reduced to a compact summary: whether the chunk is marked relevant, the set of extracted values, the set of (value, context) pairs where context is promise or concern (based on evidence items), and counts of audience labels per evidence item (non-null audiences only).

Only chunks that appear in all three runs (same document path and chunk ID) are compared. For each such chunk, the script computes pairwise agreement across the three run pairs (`run1-run2`, `run1-run3`, `run2-run3`) and then averages these three pairwise scores.

In addition, each run is summarised at sample level. For every value, the script computes chunk prevalence: the number of relevant chunks in that run in which the value appears at least once, divided by the total number of relevant chunks in the run. For audiences, it totals how often each audience label is assigned across all evidence items in the sample.

The metrics, as described in 5.2.3, are then compared pairwise using Pearson correlation (similarity of levels) and Spearman correlation (similarity of ranks).

The most important modelling choice is the small fixed sample. Reproducibility is evaluated on two documents per discourse, not the full corpus.

B.8 Processing of results

B.8.1 Results usecase 1

Table B.1 presents an overview of canonical values identified with their occurrences, discourses and number of documents they appear in.

Table B.1: Overview of canonical values identified with their occurrences, discourses and number of documents they appear in.

Canonical Value	Occurrences	Discourses	Of Docs
human well being	200	Sci (162); Pract (38)	50
economic viability	195	Sci (166); Pract (29)	47
integrity	124	Sci (109); Pract (15)	41
autonomy	112	Sci (101); Pract (11)	39
resilience	95	Sci (73); Pract (22)	38
pluralism	123	Sci (107); Pract (16)	35
contextual fit	97	Sci (86); Pract (11)	33
community	65	Sci (39); Pract (26)	33
human nature relation- ship	92	Sci (86); Pract (6)	28
sustainability	43	Sci (40); Pract (3)	24
innovation and experi- mentation	42	Sci (23); Pract (19)	23
security	35	Sci (32); Pract (3)	23
transparency	42	Sci (29); Pract (13)	22
agency	42	Sci (36); Pract (6)	20
fulfillment	42	Sci (34); Pract (8)	20
knowledge sharing	31	Sci (22); Pract (9)	20
system thinking	30	Sci (27); Pract (3)	20
systemic transformation	28	Sci (23); Pract (5)	17
pragmatism	27	Sci (22); Pract (5)	17
collaboration	39	Sci (32); Pract (7)	16
traditional knowledge	31	Sci (28); Pract (3)	15
localism	26	Sci (19); Pract (7)	15
farmer centrality	22	Sci (18); Pract (4)	15
responsibility	22	Sci (20); Pract (2)	15
purpose	18	Sci (10); Pract (8)	15
cultural heritage	26	Sci (21); Pract (5)	13
acceptance	17	Sci (15); Pract (2)	11
aesthetic value	25	Sci (15); Pract (10)	9
lived experience	10	Sci (6); Pract (4)	9
solidarity	10	Sci (7); Pract (3)	8
justice	7	Sci (7); Pract (0)	7
spirituality	12	Sci (12); Pract (0)	6
generational continuity	9	Pract (5); Sci (4)	6
decommodification	7	Sci (7); Pract (0)	4
democracy	5	Sci (5); Pract (0)	4
decolonialism	6	Sci (6); Pract (0)	3
openness	5	Sci (5); Pract (0)	3
intrinsic valuation	4	Sci (4); Pract (0)	3
freedom	3	Sci (3); Pract (0)	3
reflection	3	Sci (3); Pract (0)	2
consumer empowerment	2	Sci (1); Pract (1)	2
curiosity	1	Sci (1); Pract (0)	1
ecological technology inte- gration	1	Sci (1); Pract (0)	1
privacy	1	Sci (1); Pract (0)	1
Excluded Values			
not a value	265	Sci (224); Pract (41)	50
care for nature	73	Sci (63); Pract (10)	32
intergenerational justice	10	Sci (7); Pract (3)	8
intragenerational justice	13	Sci (10); Pract (3)	10
positive relationality	39	Sci (36); Pract (3)	20
sense of place	2	Sci (2); Pract (0)	2
restoration	9	Sci (6); Pract (3)	9

B.8.2 Final value list

The list below presents the final value indicator list as used to extract values.

- **Care for nature:** The responsibility to respect, protect, preserve, and restore ecosystems, plants, and animals. It emphasizes active stewardship, viewing nature as more than a resource, tending to nature's needs, and recognizing emotions such as empathy and care as legitimate drivers for environmental protection. Assign only when the chunk frames a clear moral stake of duty, responsibility, or protection for nature—not for generic mentions of ecological outcomes or soil metrics.

Key words: nature, stewardship, protection, preservation, ecological integrity, biodiversity, intrinsic value of nature, guardianship, harmony with nature, conservation, environmental ethics, ecological responsibility, care ethics, respect, rights for nature, soil health, animal welfare, moral inclusion of nature, more than human perspective, kinship with nature, ecological humility, non-extraction, decommodification of land.

- **Intergenerational justice:** The responsibility of current generations to ensure that future generations can meet their needs by sustaining ecological, social, economic, and institutional conditions. It concerns the fair distribution of goods, risks, and opportunities across time and emphasizes long-term responsibility. Use when the chunk clearly ties justice to future generations or long-term consequences over decades.

Key words: future, future generations, long-term, long-term governance, sustainability, precautionary principle, planetary boundaries, durable prosperity, future visions, inheritance, long-term durability, enduring solutions.

Shared justice cues: duty, responsibility, owing, equity, equality, distributive justice, redistribution, fair distribution, systemic justice.

- **Intragenerational justice:** Fair access to opportunities, resources, and decision-making for all people living today, regardless of geography or social position. It includes global solidarity and equitable distribution within the present generation, across regions, social groups, and communities. Use when justice is framed among current people or groups.

Key words: power, inclusion, global justice, responsible sourcing, social justice, representation, recognition, human rights, access, participation, inequality, marginalization, affordability, epistemic justice.

Shared justice cues: duty, responsibility, owing, equity, equality, distributive justice, redistribution, fair distribution, systemic justice.

- **Positive relationality:** The moral commitment to recognize and sustain relationships of mutual care, respect, and balanced exchange between humans and/or non-human beings. It emphasizes interdependence and the responsibility to respond to benefits received with contribution and care. Do not assign for passages primarily about transparency or accountability mechanisms unless mutual care or reciprocity is explicitly framed as the stake.

Key words: reciprocity, giving back, mutual benefit, relational accountability, trust, gratitude, gifting, symbiosis, balance, mutual care, solidarity, interdependence, interconnectedness, respect, partnership, authentic engagement, reconnection, mutual flourishing, non-domination, non-extraction, care, empathy, ethics of care.

- **Relationality tension:** The moral concern that relationships between humans and/or non-human beings are characterized by imbalance, domination, or exploitation. It highlights the violation of mutual respect and the presence of extractive, harmful, or unjust interactions.

Key words: exploitation, domination, extraction, dispossession, instrumentalization, inequitable exchange, broken trust, neglect, harm, imbalance, overuse, dependency, marginalization, relational injustice.

- **Restoration:** The moral responsibility to repair harm, regenerate degraded systems, and restore what has been damaged. It emphasizes remediation, recovery, healing, and renewal of ecological and social systems.

Key words: repair, remediation, rehabilitation, recovery, compensation, reconciliation, healing,

renewal, reparation, ecosystem restoration, revival, corrective action, rebuilding, repair of harm, reparative justice.

- **Sense of place:** The moral value of connection, belonging, and care for the specific places and landscapes where life unfolds. It emphasizes local identity, rootedness, and place-based attachment. Assign only when the chunk expresses place-attachment, belonging, identity, or rootedness.

Key words: place, locality, local identity, rootedness, belonging, attachment to land, connection to landscape, place-based, local knowledge, local culture, home, heritage landscape.

- **Agency:** The ability and responsibility to act intentionally and make meaningful choices, especially by farmers and communities, in shaping agricultural and ecological outcomes. Use when the chunk emphasizes voice, empowerment, participation, or the ability to shape outcomes. Do not assign for generic opportunities or tailoring without a clear empowerment or choice stake.

Key words: agency, empowerment, capacity to act, voice, participation, self-determination, choice, farmer-led, autonomy in decision making, control over management.

- **Autonomy:** The ability and right to govern oneself and make decisions independently, free from external control or coercion. It emphasizes independence, self-determination, and freedom of choice. Use when the chunk emphasizes independence or freedom from external control, rather than participation or empowerment.

Key words: independence, self-reliance, self-determination, self-sufficiency, freedom, liberty, non-interference, sovereignty, individual control, independence of thought and action.

- **Aesthetic value:** The sensory, emotional, or intellectual value derived from the appreciation of beauty in landscapes, ecosystems, or environments. It reflects the capacity of nature or environments to evoke admiration, harmony, and meaningful experience beyond utility.

Key words: beauty, landscape beauty, visual quality, aesthetic landscape, ecological beauty, landscape integration, harmony, landscape amenity, scenic value, attractiveness, visual identity, emotional resonance, sense of wonder.

- **Pluralism:** The ethical recognition and appreciation of diversity. It emphasizes inclusivity, openness, and the understanding that multiple approaches can coexist and contribute to more holistic and resilient outcomes. Do not assign merely because many stakeholders are involved.

Key words: diversity, plurality, inclusivity, open-mindedness, valuing diverse perspectives, knowledge diversity, epistemic diversity, holistic thinking, multiple ways of knowing, interdisciplinarity, ecosystem multifunctionality, cultural diversity, coexistence.

- **Human fulfillment:** The pursuit and realization of a meaningful and satisfying life through personal growth, purpose, and contribution, emphasizing inner development and mental well-being.

Key words: personal growth, identity formation, personal fulfillment, intrinsic fulfillment, meaningful life, meaningful work, meaningful contribution, purpose, life purpose, work fulfillment, realization of potential, flourishing, thriving, vitality, meaning making, personal transformation, moral fulfillment, doing good, generativity, positive impact, hope, self-actualization, mental well-being, life satisfaction.

- **Physical well-being:** The maintenance of human physical health through access to essential resources such as nutritious food, clean water, safe environments, and healthcare. This value concerns humans specifically.

Key words: human health, public health, nutrition, food quality, food safety, safe drinking water, sanitation, safe environments, healthcare access, occupational health, worker safety, safe working conditions, dignified livelihood, quality of life, sustenance.

- **Integrity:** The commitment to honesty, accuracy, and consistency in actions, decisions, and communication, including openness and transparency to ensure accountability and trustworthiness.

Key words: integrity, honesty, truthfulness, accuracy, credibility, authenticity, accountability, transparency, openness to scrutiny, verifiability, traceability, reliable information, clarity, legitimacy.

- **Community:** The fostering of connection, belonging, and collaboration among people, emphasizing shared responsibility, participation, and collective wellbeing within a social group.
Key words: community, community building, community belonging, social cohesion, social integration, social inclusion, participation, community engagement, collective responsibility, shared ownership, common good, collective contribution, community development, community empowerment, community resilience, community wellbeing, community spirit, societal connection, community legitimacy, community autonomy, movement building.
- **Economic viability:** The pursuit of the ability to sustain economic activity over time by ensuring stable income, financial health, and long-term livelihood security. Assign only when the chunk provides a moral rationale for economic activity (e.g. it is framed as important, necessary, or responsible), not merely because economic keywords appear.
Key words: economic viability, financial viability, economic feasibility, economic sustainability, economic stability, economic resilience, profitability, farm profitability, income stability, livelihood security, living income, farmer viability, farmer livelihood, economic prosperity, local economic vitality, market stability, economic security.
- **Efficiency:** The optimal use of resources to achieve desired outcomes with minimal waste, effort, or cost.
Key words: efficiency, resource efficiency, optimization, minimizing waste, cost-effectiveness, resource use, input-output optimization, streamlined processes, performance optimization, time efficiency, energy efficiency, material efficiency, operational efficiency.
- **Security:** The assurance of stability, safety, and protection against risks and uncertainties that may threaten livelihoods, systems, or resources.
Key words: security, safety, stability, system stability, systemic stability, operational stability, planning stability, risk mitigation, risk reduction, predictability, certainty, tenure security, land security, food security, livelihood security, climate stability, protection.
- **Collaboration:** The process of working together across individuals or groups to achieve shared goals through cooperation, joint decision-making, and mutual support. Assign only when the chunk frames collaboration as a moral stake in regenerative agriculture practice, not as a methodological device to improve research.
Key words: collaboration, cooperation, co-creation, collective action, shared decision making, stakeholder engagement, multi-stakeholder collaboration, collective learning, collaborative engagement, collective governance, collective impact, dialogue, knowledge sharing, mutual learning, social learning, collective mobilization, openness to participation.
- **Resilience:** The capacity to withstand, adapt to, and recover from disturbances while maintaining core functions.
Key words: resilience, systemic resilience, climate resilience, environmental resilience, ecosystem resilience, adaptive capacity, adaptability, flexibility, robustness, continuity, recovery, dynamic adaptation, proactive adaptation, stability under stress.
- **Learning:** Recognizing the importance of the pursuit and development of knowledge through continuous learning, reflection, and the generation of new understanding. Assign only when the chunk provides a moral rationale for learning or knowledge creation, not merely because words like “learning” or “research” appear.
Key words: learning, knowledge creation, continuous learning, curiosity, exploration, discovery, adaptive learning, iterative learning, learning by doing, openness to learning, development, learning from experience, knowledge generation, understanding, insight.
- **Innovation and experimentation:** The pursuit of new ideas, methods, and practices through creativity and experimentation. Assign only when the chunk provides a moral rationale for innovating or experimenting, not merely because keywords like “innovation” or “experimentation” appear.
Key words: innovation, experimentation, creativity, resourcefulness, openness to innovation, pioneering, new methods, novel approaches, trying new things, experimentation processes.

- **Productivity:** The emphasis on generating high levels of output, goods, or services as a desirable goal.

Key words: productivity, high output, output generation, yield, production capacity, output maximization, labor productivity.

B.9 Validation

A link to the Excel sheet containing all validation can be found [here](#).

B.10 Reproducibility

To assess the stability of the two extraction pipelines, each pipeline was run three times on the same randomly sampled subset of chunks (fixed seed), and the resulting outputs were compared across runs using a set of coefficients. The coefficients and their interpretations are described below.

B.10.1 Coefficients

keys_total_union / keys_total_intersection These are the number of unique chunk identifiers (a combination of document and chunk identifiers) found across the three runs. When the union equals the intersection, every run produced output for exactly the same set of chunks, meaning no chunks were skipped or added between runs. Equality on both metrics confirms that any disagreements observed in downstream metrics concern the content of extraction, not the presence or absence of chunks.

relevance_agreement For each chunk, the three runs either agree or disagree on whether that chunk passes the binary relevance filter (`is_regen_related` and `is_agriculture_related`). Relevance agreement is computed as the proportion of chunks on which all runs agree, then averaged across chunks, yielding a value between 0 and 1 (where 1 indicates perfect agreement).

value_set_jaccard For each chunk that passes the relevance filter, the set of value names returned by each run is compared pairwise using the Jaccard similarity coefficient:

$$J(A, B) = \frac{|A \cap B|}{|A \cup B|}$$

This is computed for each pair of runs and then averaged across all comparable chunks and all three pairwise run comparisons. A value of 1 indicates identical value sets. Lower values indicate substitution, omission, or addition of value names across runs.

value_context_jaccard This coefficient follows the same logic as `value_set_jaccard`, but each item is a (value, context) pair.

pairwise_value_frequency_correlations (Pearson / Spearman) Rather than comparing runs at chunk level, this metric aggregates across the entire sampled corpus: for each run, a frequency vector is constructed in which each element represents how often a particular value name appears across all sampled chunks. The three runs yield three such vectors, which are then compared pairwise (run 1 vs. run 2, run 1 vs. run 3, run 2 vs. run 3) using both Pearson correlation (capturing similarity in absolute frequency levels) and Spearman rank correlation (capturing similarity in the relative ranking of values by frequency). High correlations on both metrics indicate that the overall profile of which values are extracted frequently is stable across runs.

pairwise_audience_frequency_correlations (Pearson / Spearman) Similar to the value frequency correlations, but applied to audience labels derived from evidence items. For each run, a frequency vector is built over all audience categories found in the sample, and these vectors are compared pairwise. High correlations indicate that the aggregate distribution of audience codings is stable across runs.

B.10.2 Results and interpretation

extract_values

The reliability check was run on a fixed random sample using seed 123 and `max_per_discourse = 2` (version v8). Results were as follows:

- **keys_total_union = keys_total_intersection = 214.** All three runs processed exactly the same 214 chunks, confirming comparability.
- **relevance_agreement** ≈ 0.947 . The relevance gate agreed across runs on approximately 95% of chunks, indicating that the binary scoping decision is largely stable.
- **value_set_jaccard** ≈ 0.659 . On average, roughly two-thirds of the value names in a given chunk are shared across runs, with the remainder varying due to substitution, omission, or addition. This represents moderate chunk-level stability.
- **value_context_jaccard** ≈ 0.630 . When the promise/concern framing is included, agreement drops slightly, reflecting additional variability in how extracted values are contextualised across runs.
- **Value-frequency correlations: Pearson** ≈ 0.990 – 0.992 , **Spearman** ≈ 0.951 – 0.962 . At the aggregate level, the frequency profiles of extracted values are very highly correlated across all three run pairs.
- **Audience-frequency correlations: Pearson** ≈ 0.995 – 0.997 , **Spearman** ≈ 0.929 – 0.967 . Similarly, aggregate audience distributions are highly stable across runs.

These results indicate that chunk-level extraction is only moderately stable, while aggregate distributions are highly stable across runs. Findings should therefore be interpreted at the level of aggregated frequency distributions rather than at the individual chunk level.

extract_policy_values

The reliability check was run on a fixed random sample using seed 456 and `max_per_discourse = 2` (version v6). Results were as follows:

- **keys_total_union = keys_total_intersection = 36.** All three runs processed the same 36 chunks.
- **relevance_agreement** ≈ 0.981 . The relevance gate is very stable.
- **value_set_jaccard** ≈ 0.674 . Chunk-level value set agreement is in a similar range to `extract_values`, indicating moderate and comparable stability.
- **value_context_jaccard** ≈ 0.629 . As with `extract_values`, adding the promise/concern context reduces agreement slightly.
- **Value-frequency correlations: Pearson** ≈ 0.976 – 0.986 , **Spearman** ≈ 0.948 – 0.971 . Aggregate value frequency profiles are strongly correlated across runs.
- **Audience-frequency correlations: Pearson** ≈ 0.988 – 0.996 , **Spearman** ≈ 0.929 – 0.976 . Aggregate audience distributions are similarly stable.

The pattern is similar to that of `extract_values`: high relevance stability, moderate chunk-level extraction agreement, and very high aggregate-level correlation.

B.11 Results discourse analysis

B.11.1 Practitioners

This section presents the results from the analysis of the practitioner discourse. Table B.2 shows the value appearance (%) within the practitioner discourse for the contexts promise and concern.

Table B.2: Value appearance (%) within the practitioner discourse for the context promise and concern.

Value	# promise chunks	promise (%)	# concern chunks	concern (%)	# total chunks
Care for nature	136	82.4	33	20.0	165
Economic viability	72	43.6	19	11.5	165
Efficiency	42	25.5	9	5.5	165
Security	21	12.7	8	4.8	165
Collaboration	68	41.2	1	0.6	165
Resilience	49	29.7	5	3.0	165
Learning	89	53.9	3	1.8	165
Innovation and experimentation	59	35.8	2	1.2	165
Productivity	26	15.8	1	0.6	165
Community	62	37.6	1	0.6	165
Intergenerational justice	46	27.9	7	4.2	165
Intragenerational justice	28	17.0	5	3.0	165
Positive relationality	32	19.4	1	0.6	165
Relationality tension	0	0.0	10	6.1	165
Restoration	57	34.5	4	2.4	165
Sense of place	26	15.8	3	1.8	165
Agency	34	20.6	2	1.2	165
Autonomy	8	4.8	1	0.6	165
Aesthetic value	20	12.1	1	0.6	165
Pluralism	35	21.2	2	1.2	165
Human fulfillment	36	21.8	5	3.0	165
Physical well being	45	27.3	2	1.2	165
Integrity	25	15.2	6	3.6	165

B.11.2 Scientific

This section presents the results from the analysis of the scientific discourse.

Context

Table B.3 shows the value appearance (%) within the scientific discourse for the context promise and concern.

Table B.3: Value appearance (%) within the scientific discourse for the context promise and concern.

Value	# promise chunks	promise (%)	# concern chunks	concern (%)	# total chunks
Care for nature	820	58.3	311	22.1	1407
Economic viability	419	29.8	226	16.1	1407
Efficiency	208	14.8	38	2.7	1407
Security	127	9.0	93	6.6	1407
Collaboration	226	16.1	28	2.0	1407
Resilience	198	14.1	32	2.3	1407
Learning	351	24.9	89	6.3	1407
Innovation and experimentation	198	14.1	36	2.6	1407
Productivity	166	11.8	70	5.0	1407
Community	181	12.9	23	1.6	1407
Intergenerational justice	213	15.1	62	4.4	1407
Intragenerational justice	160	11.4	149	10.6	1407
Positive relationality	257	18.3	44	3.1	1407
Relationality tension	5	0.4	232	16.5	1407
Restoration	305	21.7	59	4.2	1407
Sense of place	105	7.5	26	1.8	1407
Agency	277	19.7	73	5.2	1407
Autonomy	67	4.8	35	2.5	1407
Aesthetic value	19	1.4	2	0.1	1407
Pluralism	248	17.6	69	4.9	1407
Human fulfillment	149	10.6	27	1.9	1407
Physical well being	123	8.7	45	3.2	1407
Integrity	135	9.6	161	11.4	1407

Sub-discourse groups

To check whether particular subcategories of the scientific discourse disproportionately drive the overall results, and thereby skew the patterns observed, value appearance within a promise context is presented per subcategory in Figure B.1. This check is important because the scientific corpus contains documents from different subcategories, such as studies focused on RA in coastal regions, studies from one specific journal, studies with a Dutch context and reports, and if one subcategory is much more value-laden than others, the aggregate results would primarily reflect that subcategory rather than the corpus as a whole.

Overall, the patterns are well-spread across subcategories, with no single subgroup strongly dominating the results. One exception is economic viability, which is clearly concentrated in the coastal and reports subcategories. The prominence of economic viability in the reports is not surprising, as these documents were produced by the economic department of WUR and therefore naturally foreground financial considerations.

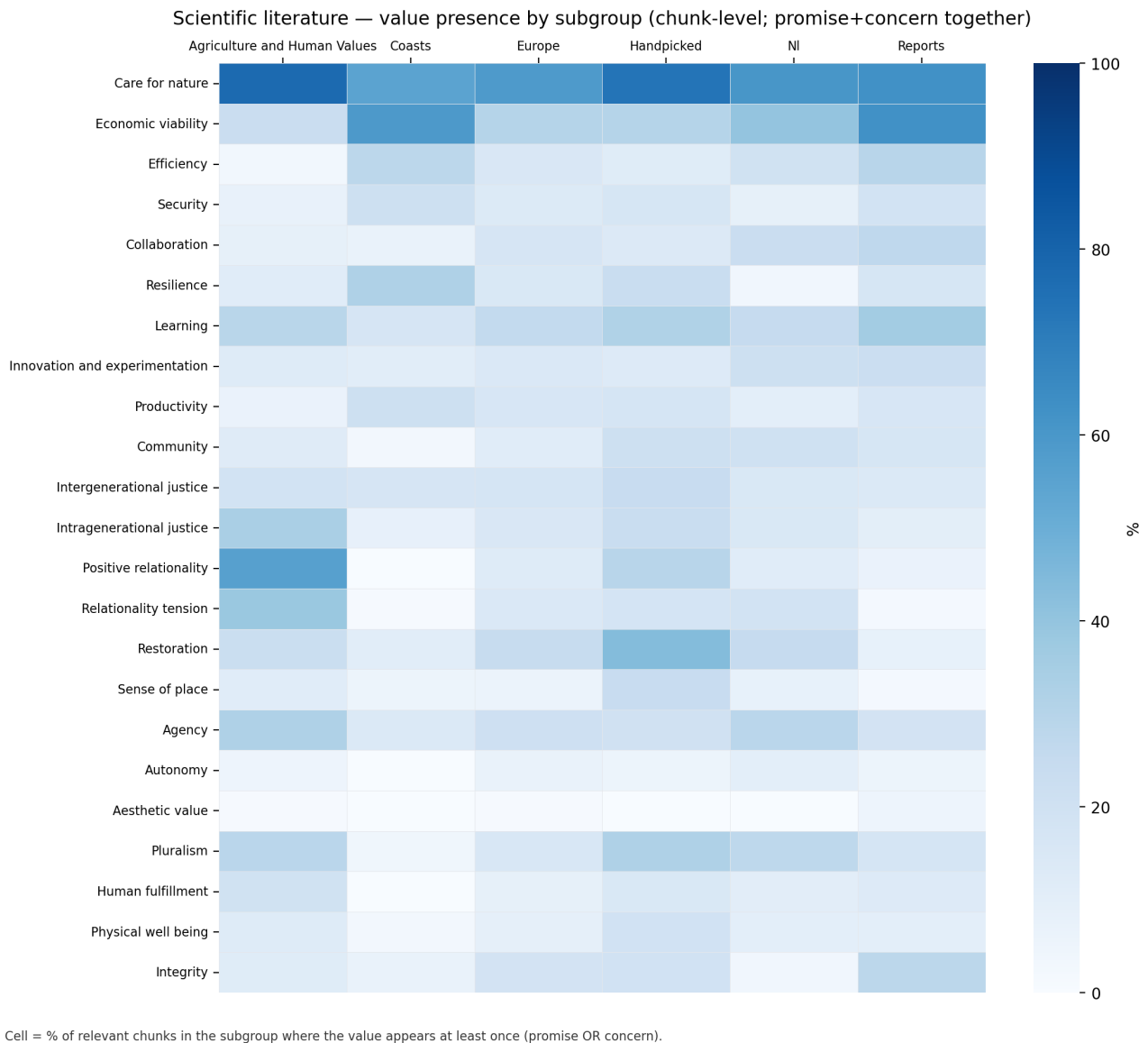


Figure B.1: Scientific sub-discourse analysis of the value appearance (%) within both contexts.

B.11.3 Policy

This section presents the results from the analysis of the policy discourse.

Context

Table B.4 shows the value appearance (%) within the policy discourse for the context promise and concern.

Table B.4: Value appearance (%) within the policy discourse for the context promise and concern.

Value	# promise chunks	promise (%)	# concern chunks	concern (%)	# total chunks
Care for nature	257	65.7	75	19.2	391
Economic viability	232	59.3	71	18.2	391
Efficiency	104	26.6	14	3.6	391
Security	114	29.2	48	12.3	391
Collaboration	232	59.3	4	1.0	391
Resilience	75	19.2	6	1.5	391
Learning	152	38.9	5	1.3	391
Innovation and experimentation	183	46.8	6	1.5	391
Productivity	35	9.0	11	2.8	391
Community	42	10.7	2	0.5	391
Intergenerational justice	112	28.6	14	3.6	391
Intragenerational justice	71	18.2	15	3.8	391
Positive relationality	32	8.2	1	0.3	391
Relationality tension	1	0.3	31	7.9	391
Restoration	57	14.6	5	1.3	391
Sense of place	33	8.4	5	1.3	391
Agency	140	35.8	19	4.9	391
Autonomy	7	1.8	8	2.0	391
Aesthetic value	43	11.0	4	1.0	391
Pluralism	54	13.8	4	1.0	391
Human fulfillment	22	5.6	1	0.3	391
Physical well being	73	18.7	8	2.0	391
Integrity	91	23.3	18	4.6	391

Distinction between governance levels

To examine whether different levels of policymaking diverge in their value emphasis, the value appearance per subcategory of the policy discourse is presented in Figure B.2.

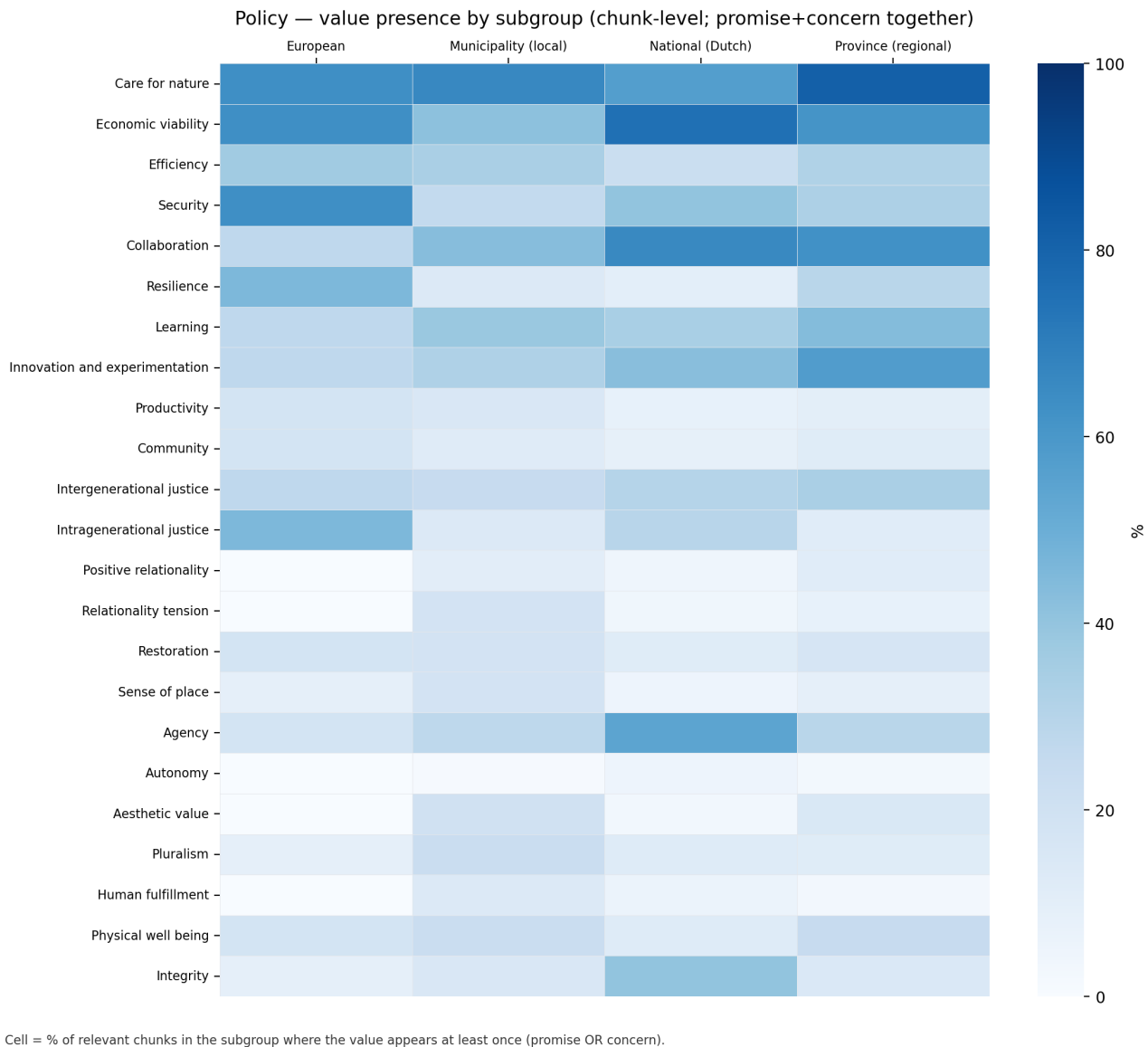


Figure B.2: Policy sub-discourse analysis of the value appearance (%) within both contexts.

Overall, the pattern is reasonably consistent across governance levels, with care for nature, economic viability, and collaboration appearing strongly across all subcategories. Equally consistent is the absence of values like community, sense of place, human wellbeing and restoration at every level of governance. Within this shared pattern, however, each level has its own focus.

The European level shows a stronger emphasis on security, intragenerational justice, and resilience alongside care for nature and economic viability. This reflects the broader geopolitical and distributional concerns that characterise the EU.

The national level is strongly oriented towards economic viability, care for nature, collaboration, and agency, which aligns with the dominant themes in the Dutch public debate around agricultural reform. The regional level stands out for its strong focus on care for nature, and furthermore values collaboration, and innovation and experimentation.

The municipal level presents a more plural value landscape and is the least value-oriented, with less emphasis on economic viability than the other levels and a relatively strong presence of collaboration and learning, suggesting a more process-oriented approach to agricultural governance.

Audience heatmaps

Figure B.3 shows the occurrences of the different audiences with the different values within the policy discourse.

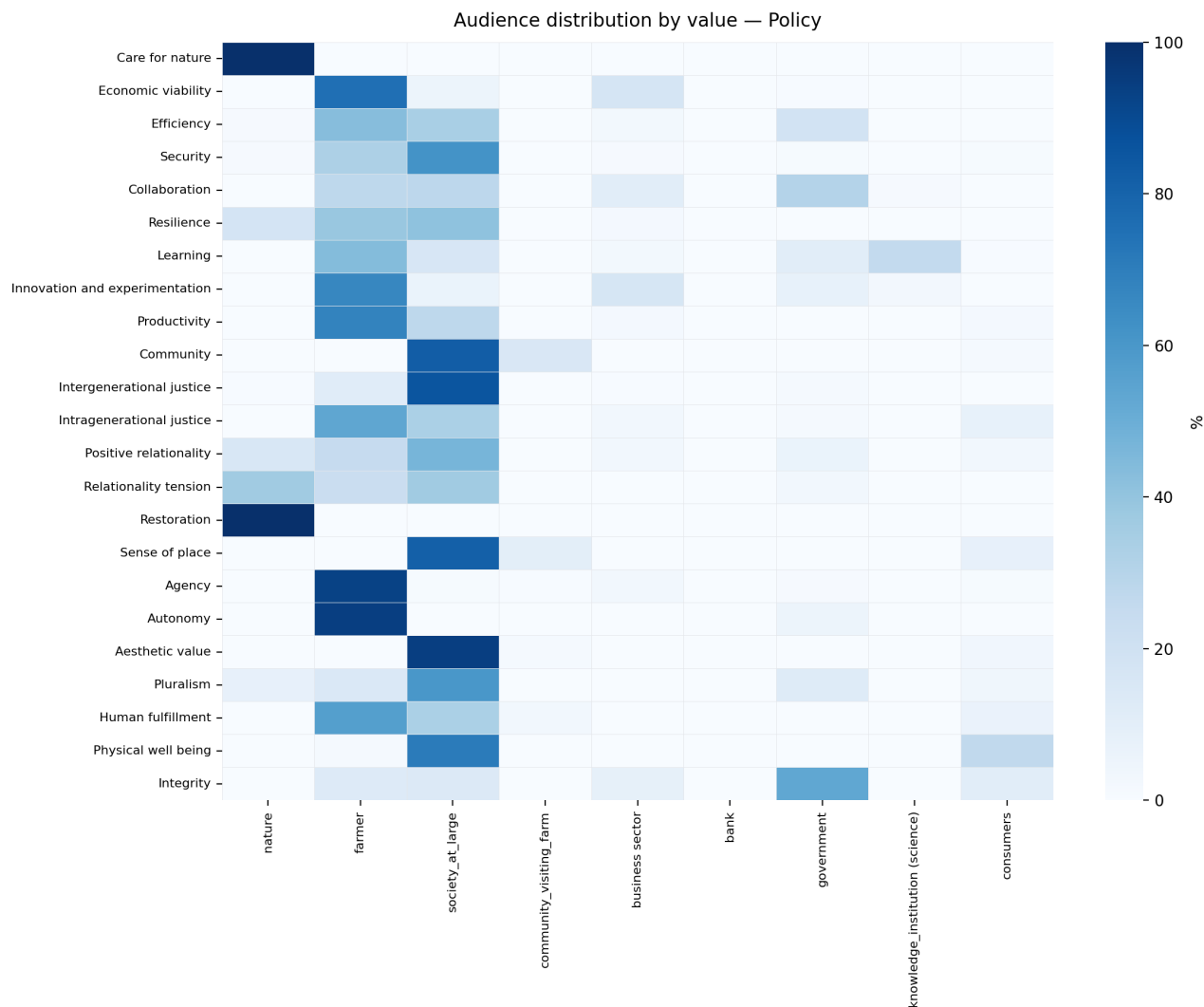


Figure B.3: Occurrences of the different audiences with the different values within the policy discourse.

Figure B.4 shows the occurrences of the different audiences with the different values within the practioners discourse.

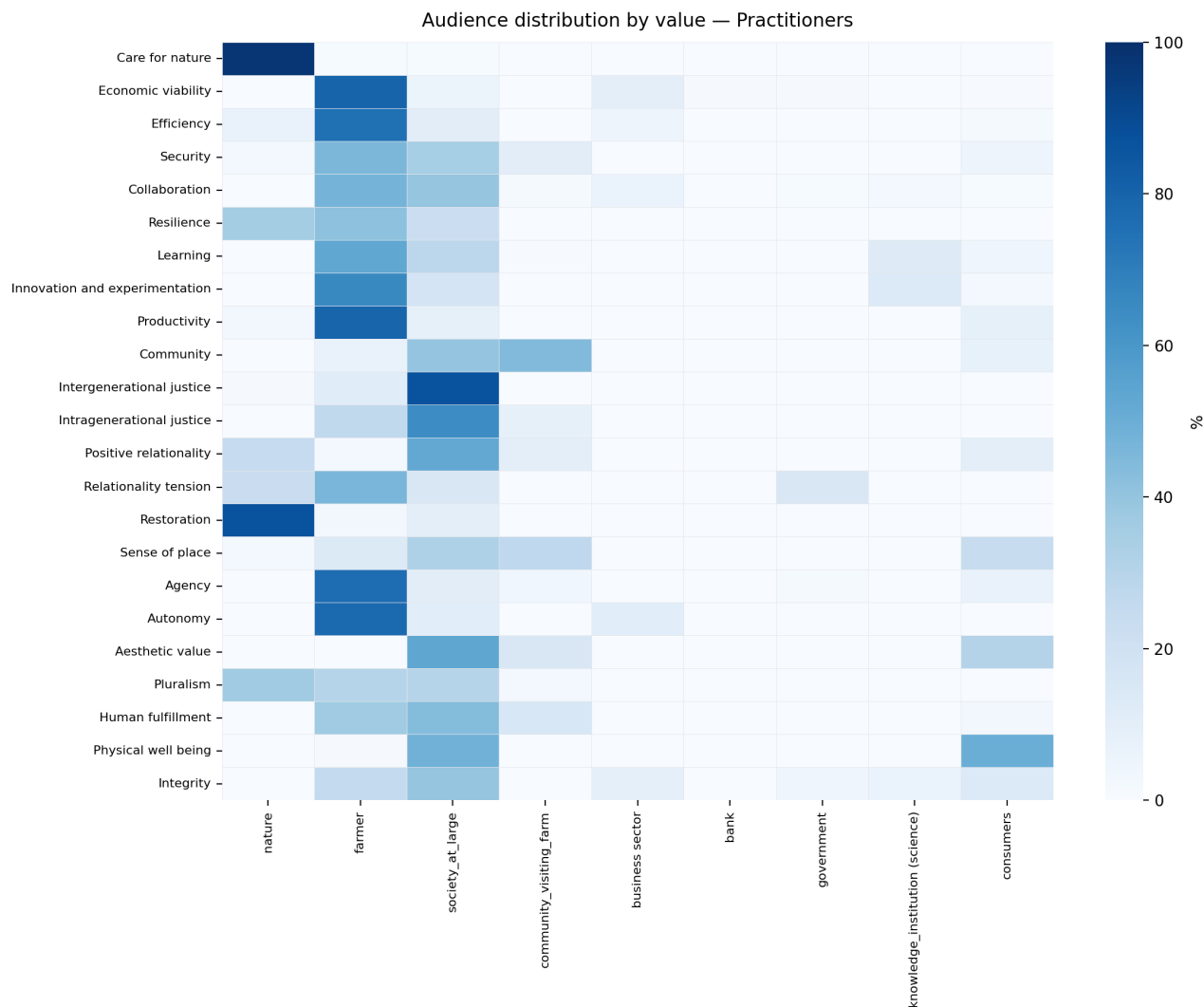


Figure B.4: Occurrences of the different audiences with the different values within the practitioners discourse.

Figure B.5 shows the occurrences of the different audiences with the different values within the scientific discourse.

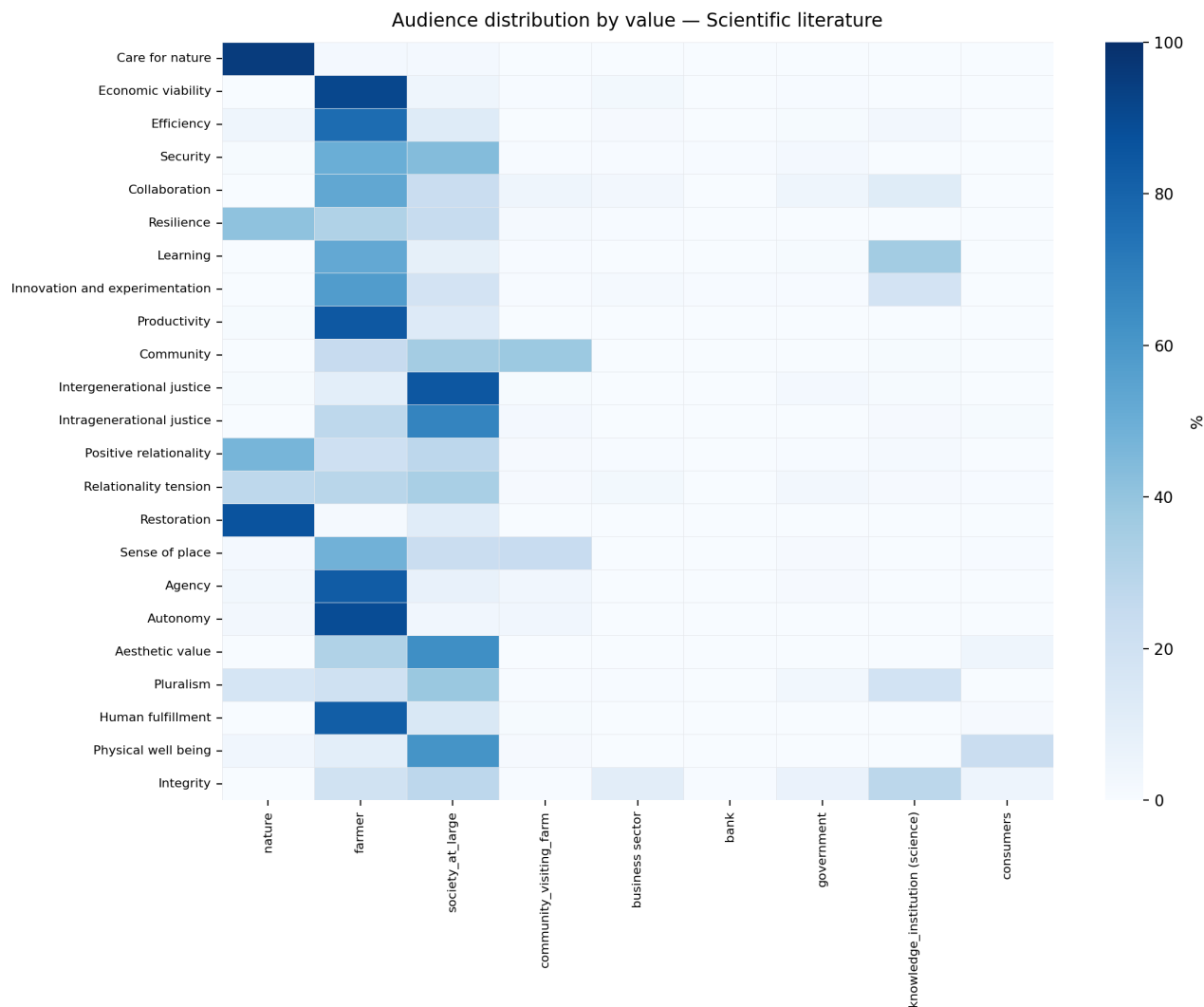


Figure B.5: Occurrences of the different audiences with the different values within the scientific discourse.

C | Appendix C: Interviews

C.1 Guiding questions interviews

This section introduces the guiding questions for the interviews. These questions were used as a rough guide during the interview, as the format was semi-structured interviews. A selection of questions was asked, depending on the interactions with the interviewee. All interviews were conducted in Dutch, so the questions are in Dutch too. They are categorised per interviewee.

Guiding questions per interview

Interview for farmers

Persoonlijke introductie

- Kunt u uzelf en uw rol kort introduceren?
- Kunt u uw bedrijf kort beschrijven?
- Wat betekent regeneratieve landbouw voor u in uw eigen woorden?

Persoonlijke motivatie (waarden)

- Hoe bent u in aanraking gekomen met regeneratieve landbouw?
- En kunt u uw ontwikkeling daarnaartoe beschrijven?
- Was er een moment of inzicht dat hierin bepalend is geweest?
- Wat motiveert u om op deze manier te boeren?
- Waarom vindt u juist regeneratie binnen de landbouw zo belangrijk?

Waarden

- Als u over tien jaar terugkijkt op uw bedrijf, wat wilt u dan kunnen zeggen over hoe u geboerd heeft?
- Kunt u mij meenemen in een moment op de boerderij waarop duidelijk werd wat voor u echt belangrijk is in hoe u werkt?
- Wanneer had u voor het laatst een dag waarop u dacht: dit is precies waarom ik dit doe? En waarom was dat?
- Kunt u een moment beschrijven waar iets 'goed' of 'fout' voelde in uw werk?
- Wat voor soort beslissingen moet u maken in uw werk? Hoe maakt u dat soort keuzes?
- Kunt u 1 concreet keuze moment beschrijven en uitleggen wat u in dat moment belangrijk vond?
- Was er het afgelopen jaar een beslissing die u lang heeft beziggehouden? Wat maakte dat zo lastig?
- Stel er komt morgen een nieuw iemand werken op de boerderij, wat zijn de eerste dingen die u diegene leert over het bedrijf en uw visie op landbouw?
- Welke handelingen of keuzes op uw boerderij vindt u het belangrijkste? Kunt u er een paar beschrijven en uitleggen waarom u die doet?
- Wat levert uw manier van boeren op (waarden creatie) voor uzelf, voor anderen, voor het land/natuur?

Als nog niet beantwoord, meer expliciet:

- Wat vindt u belangrijk in de manier waarop u boert?

- Als u dat in uw eigen woorden zou beschrijven: welke waarden staan voor u centraal in de regeneratieve landbouw?
- Hoe ziet u die waarden terug in uw dagelijkse praktijk?
- Kunt u concrete voorbeelden geven van keuzes die u maakt op basis van die waarden?
- Zijn er waarden die soms moeilijk te realiseren zijn?

Waarden conflicten

- Zijn er dingen die u belangrijk vindt, maar die soms moeilijk te realiseren zijn in de praktijk?
- Zijn er momenten geweest waarop u onder druk stond om iets te doen wat niet klopte met hoe u wil boeren? Wat waren deze momenten en hoe reageerde u?
- Zijn er dingen op uw bedrijf die botsen met elkaar? bijvoorbeeld tijd, geld, dieren, het land, korte vs lange termijn?
- Welke obstakels ervaart u om regeneratief te kunnen boeren?
- Ervaart u soms dat uw manier van boeren moeilijker wordt gemaakt door beslissingen die ergens anders worden genomen?
- Welke obstakels ervaart u vanuit de gemeente, provincie, overheid, EU, dus vanuit beleid?
- Waar ligt de focus volgens u in het huidige beleid en hoe verhoudt zich dat tot uw manier van boeren?
- Wat mist er volgens u in het huidige landbouwbeleid?
- Heeft u het gevoel dat regels of beleid u soms beperken om te doen wat u zelf juist vindt?
- Welke obstakels ervaart u vanuit de maatschappij om regeneratief te boeren?
- Wiens belangen worden er volgens u in ons huidige voedselsysteem niet gehoord? En van wie juist wel?

Meer expliciet (alleen vragen als ik nog geen antwoord heb gekregen door bovenstaande vragen)

- Ervaart u spanningen tussen de verschillende dingen die u belangrijk vindt? Kunt u daar een voorbeeld van geven?

Natuur

- Wat betekent de natuur voor u?
- Welke rol speelt de natuur in uw werk?
- Op welke manieren komt dat in de praktijk tot uiting?
- Heeft de natuur voor u ook een waarde los van wat het de mens oplevert?

Technologie

- Welke rol speelt technologie in uw dagelijkse werk?

- In de Delta zijn veel technologieën aanwezig om het waterpeil en de bodem te beheren. Merkt u daar iets van in uw dagelijkse werk?
- Hoe vormt/bepert technologie wat mogelijk is op jouw boerderij?
- Zijn er momenten waarop technologie ondersteunt of juist botst met hoe jij wil boeren?

Visie 2100

- Stel dat dit gebied volledig zou draaien op regeneratieve landbouw, hoe zou het gebied er dan uitzien? Niet alleen ecologisch, maar ook sociaal en economisch?
- Hoe zouden onderlinge relaties er dan volgen u uitzien?
- Wat moet er veranderen om deze visie mogelijk te maken?
- Wat zou er worden gewonnen/verloren in zo'n transitie?
- Wie maken de beslissingen in dat systeem?

Testen van aannames – kijk per vraag of al benoemd

Ik heb een analyse gedaan met documenten om te kijken welke waarden naar voren komen rondom regeneratieve landbouw. Ik stel nu een aantal vragen om die bevindingen te toetsen, maar ik hoor ook graag wat er volgens u ontbreekt in dit beeld.

- Uit mijn analyse kwam naar voren dat 'zorg voor de natuur' een belangrijke drijfveer is voor boeren. Herkent u dat?
 - Waarom vindt u die zorg voor de natuur zo belangrijk?
 - Heeft de natuur voor u ook een waarde los van wat het de mens oplevert?
 - Op welke manieren komt die zorg voor de natuur in de praktijk tot uiting?
- Economische vitaliteit kwam ook sterk naar voren. Hoe belangrijk is dat voor u?
 - Wanneer schuurt dat eventueel met andere waarden?
- Hoe belangrijk is voor u onafhankelijkheid of autonomie van de boer/boerderij voor u?
- Hoe belangrijk zijn samenwerking en gemeenschap voor u?
- Hoe belangrijk is rechtvaardigheid voor u? Bijvoorbeeld richting andere boeren of verschillende groepen in de samenleving
- Hoe belangrijk is menselijk welzijn, zowel fysiek als mentaal, voor u? En voor wie is dat vooral belangrijk (uzelf, werknemers, consumenten, anderen)?
- Voelt u zich op een bepaalde manier verbonden met het land en de mensen hier? Zou u kunnen uitleggen waarom wel/niet? En hoe uit zich dit in de praktijk?
- Wat betekent samenwerken met anderen hier voor u?
- Zijn er waarden of thema's die u mist in dit beeld? Dingen die voor u belangrijk zijn maar die ik nog niet heb benoemd?

Afwegingen/trade-offs

- Care for nature vs Economic viability
 - Heeft u wel eens moeten kiezen tussen wat goed is voor het land en wat financieel haalbaar is?
- Restoration vs Productivity
 - Zijn er momenten waarop herstel van bodem of natuur betekent dat u minder produceert?
- Autonomy vs Collaboration
 - Zijn er situaties waarin samenwerken uw zelfstandigheid als boer beperkt?
- Mental well being vs Productivity
 - Zijn er momenten waarop meer werken of produceren botst met uw eigen voldoening of plezier in het werk?
- Intergenerational justice vs Intragenerational justice
 - Zijn er momenten waarop langetermijndoelen voor de toekomst (bijvoorbeeld voor de bodem of volgende generaties) botsen met wat u nu als eerlijk of nodig ziet voor uzelf of anderen? Kunt u daar een concreet voorbeeld van geven?
- Positive relationality vs Efficiency
 - Kost het opbouwen van relaties, met mensen of met de natuur, soms tijd die ergens anders nodig is?

Afsluiting

Zijn er dingen die ik u niet heb gevraagd, die u wel zou willen delen?

Interview for volunteer

Introductie

- Kunt u uzelf kort introduceren?
- Hoe zou u uw rol op de boerderij omschrijven?
- Hoe bent u betrokken geraakt bij deze boerderij?
- Wat voor werkzaamheden doet u hier als vrijwilliger?

Motivatie

- Waarom heeft u ervoor gekozen om hier vrijwilliger te worden?
- Wat betekent het voor u om hier vrijwilliger te zijn? Wat haalt u persoonlijk uit deze ervaring?

Waarden in regeneratieve landbouw

- Wat vindt u belangrijk aan de manier van landbouw van deze boerderij?
- Kunt u voorbeelden geven van momenten waarop u dacht: “dit is waarom ik dit doe”?
- Als u dat in uw eigen woorden zou beschrijven: Wat zijn volgens u de doelen van deze boerderij, en waar merkt u dat aan in de manier waarop hier gewerkt wordt?
- Hoe ziet u dat terug in de dagelijkse praktijk?
- In mijn onderzoek komt ‘zorg voor natuur’ vaak naar voren. Herkent u dat hier?
- Speelt welzijn (bijv. van uzelf of anderen) een rol in uw motivatie?
- Hoe belangrijk vindt u zaken als eerlijkheid of rechtvaardigheid in voedselproductie?
- Wat levert deze manier van boeren op (waarden creatie) voor uzelf, voor anderen, voor het land/natuur?

Relaties

- Wat betekent natuur voor u persoonlijk?
- Is uw relatie met natuur veranderd sinds u hier werkt? Zo ja, hoe?
- Voelt u zich op een bepaalde manier verbonden met het land en de mensen hier? Zou u kunnen uitleggen waarom wel/niet?
- Wat betekent samenwerken met anderen hier voor u?

Reflectie

- Ziet u spanningen tussen verschillende doelen (waarden) op de boerderij?
- Hoe uiten zich die in de praktijk?
- Zijn er doelen van de boerderij die soms moeilijk te realiseren zijn in de praktijk?

- Waarom zijn deze moeilijk? Wat vormt het obstakel?
- Ziet u uitdagingen voor dit soort boerderijen in de samenleving?

Visie 2100

- Stel dat dit gebied volledig zou draaien op regeneratieve landbouw, hoe zou het gebied er dan uitzien? Niet alleen ecologisch, maar ook sociaal en economisch?
- Hoe zouden onderlinge relaties er dan volgen u uitzien?
- Wat moet er veranderen om deze visie mogelijk te maken?
- Wat zou er worden gewonnen/verloren in zo'n transitie?
- Wie maken de beslissingen in dat systeem?

Afsluiting

Zijn er dingen die ik u niet heb gevraagd, die u wel zou willen delen?

Interview for policy maker 1

Introductie

Kunt u uzelf en uw rol binnen LEADER kort introduceren?

Kunt u LEADER kort beschrijven?

Op welke manier is LEADER betrokken bij het beleid rondom landbouw binnen de Zuid-Hollandse Delta?

Doelen (waarden) van organisatie

Benadrukken dat dit alles gaat over landbouw beleid.

Welke doelen streeft uw organisatie na rondom landbouw in de Zuid-Hollandse Delta?

Wat probeert LEADER te bereiken?

Hoe komen deze doelen tot stand in de praktijk?

Botsen de doelen van de organisatie soms met wat er in de praktijk mogelijk is? Zo ja, kunt u daar concrete voorbeelden van geven?

Zijn er momenten waarop jullie beleid anders uitpakt dan bedoeld? Kunt u daar een concreet voorbeeld van geven?

Zijn er momenten waarop u moet kiezen tussen verschillende doelen?

- Als onduidelijk -> bijvoorbeeld:
 - economische haalbaarheid en natuurherstel?
 - lange termijn doelen en korte termijn belangen?
- Hoe worden dat soort keuzes dan gemaakt?

Op jullie website staat dat jullie de leefbaarheid en economie willen versterken op het platteland in de ZH Delta. Wat wordt daar precies mee bedoeld?

- Waarom willen jullie dat?
- Welke afwegingen moeten jullie maken om te bepalen of een project dat doet?
Hoe bepalen jullie dat?

Op jullie website zag ik 4 hoofdthema's: innovatie, recreatie, biodivers landschap en leefbaarheid/klimaat. Waarom zijn specifiek deze thema's belangrijk voor jullie?

- Op welke manieren botsen deze doelen met wat er in de praktijk mogelijk is?
- Moeten jullie hierin wel eens keuzes maken? Hoe worden dat soort keuzes gemaakt?

Kunt u mij meenemen in een recent project of besluit waar u bij betrokken was rondom landbouw?

- Hoe kwam dat tot stand? Wie waren daarbij betrokken?
- Wat waren daarin de belangrijkste afwegingen die gemaakt moesten worden?

Wie staat er centraal?

Is LEADER bezig met regeneratieve landbouw en zo ja, op welke manier?

Wie staat er centraal binnen het landbouwbeleid vanuit uw perspectief? De boer, overheid, de consument, etc.

- Wanneer u een besluit neemt of een project beoordeelt, wiens belangen wegen dan het zwaarst?

Op welke manier nemen jullie de natuur mee binnen jullie beleid/organisatie?

- Heeft natuur een stem binnen jullie beleid?

Op welke manier nemen jullie de boer mee binnen jullie beleid/organisatie?

- Krijgt de boer een stem binnen jullie beleid?
- Veel boeren die ik sprak gaven aan dat subsidies gepaard gaan met veel regeldruk en administratieve overhead. Herkent u dat? En wordt daar rekening mee gehouden?

Algemeen landbouw beleid en samenwerking

Breder dan uw eigen organisatie, hoe zou u het beleidsmaakproces voor de landbouw in deze regio omschrijven? Welke partijen zijn daarbij betrokken en hoe worden beslissingen genomen?

Welke doelen staan centraal in het landbouwbeleid in deze regio, vanuit uw perspectief?

Welke afwegingen worden er denkt u gemaakt rondom het landbouw beleid in deze regio?

Met welke organisaties en op welke manier werkt uw organisatie samen met andere organisaties rondom landbouw in de ZH Delta? En specifiek rondom regeneratieve landbouw?

- Hoe verloopt deze samenwerking?
- Zijn er verschillen in belangen of perspectieven tussen de organisaties? Kunt u uitleggen waarom wel of niet?
- Wie hebben volgens u de meeste invloed op landbouwbeleid in deze regio en waarom? En wie de minste?

Waarde van RA/A

Wat levert landbouw de regio Zuid-Hollandse Delta op in uw eigen woorden? En voor wie zijn deze opbrengsten (niet financieel)?

Wat betekent regeneratieve landbouw in uw eigen woorden?

Wat denkt u dat regeneratieve landbouw de regio kan opleveren? En voor wie zijn deze opbrengsten (niet financieel)?

Hoe ziet u de rol van regeneratieve landbouw binnen het voedselsysteem van de ZH Delta in de toekomst?

Op welke manier komen de doelen die LEADER heeft overeen met de doelen die regeneratieve landbouw nastreeft denkt u? En op welke manieren botsen ze?

Wat zijn volgens u de grootste kansen en obstakels voor een bredere transitie naar RA in de ZH Delta, vooral op het gebied van beleid en beleidsontwikkeling?

Visie 2100

Stel dat dit gebied volledig zou draaien op regeneratieve landbouw, hoe zou het gebied er dan uitzien? Niet alleen ecologisch, maar ook sociaal en economisch?

Hoe zouden onderlinge relaties er dan volgen u uitzien?

Wat moet er veranderen om deze visie mogelijk te maken?

Wat zou er worden gewonnen/verloren in zo'n transitie?

Wie maken de beslissingen in dat systeem?

Overig

Zijn er dingen die ik u niet heb gevraagd, die u wel zou willen delen?

Interview for policy maker 2

Introductie

Kunt u uzelf en uw rol binnen Municipality kort introduceren?

Doelen (waarden) van organisatie

Benadrukken dat dit alles gaat over landbouw beleid.

Welke doelen streeft uw organisatie na rondom landbouw in de Zuid-Hollandse Delta?

Wat probeert de Municipality te bereiken?

- Hoe komen deze doelen tot stand in de praktijk?

Botsen de doelen van de organisatie soms met wat er in de praktijk mogelijk is? Zo ja, kunt u daar concrete voorbeelden van geven?

- Zijn er momenten waarop jullie beleid anders uitpakt dan bedoeld? Kunt u daar een concreet voorbeeld van geven?

Zijn er typische dilemma's waar u in uw werk rondom landbouwbeleid mee te maken krijgt?

- Waar gaan die dilemma's meestal over?
- Wat maakt het lastig om daarin keuzes te maken?

Zijn er momenten waarop u of de gemeente moet kiezen tussen verschillende doelen?

- Als onduidelijk -> bijvoorbeeld:
 - economische haalbaarheid en natuurherstel?
 - lange termijn doelen en korte termijn belangen?
- Hoe worden dat soort keuzes dan gemaakt?

Kunt u mij meenemen in een recent project of besluit waar u bij betrokken was rondom landbouw?

- Hoe kwam dat tot stand? Wie waren daarbij betrokken?
- Wat waren daarin de belangrijkste afwegingen die gemaakt moesten worden?

De Municipality is bezig met multifunctionele landbouw.

- Waarom is de gemeente hiermee gestart? Wat wilt de gemeente hiermee bereiken?
- Kunt u een concreet voorbeeld geven van hoe dat in de praktijk vorm krijgt?
- Welke afwegingen spelen daarin?

De gemeente spreekt ook over toekomstbestendige landbouw. Wat wordt daar precies mee bedoelt?

De gemeente benoemt innovatie als belangrijk binnen de landbouw.

- Kunt u een concreet voorbeeld geven van een project of besluit waarin innovatie centraal stond? Wat was het doel van die innovatie?
- Wanneer wordt iets in jullie beleid gezien als 'goede' of 'gewenste' innovatie? Waar wordt dan op gelet?
- Zijn er ook situaties waarin innovatie botst met andere doelen, zoals natuur, kosten of draagvlak? Kunt u daar een voorbeeld van geven?

Wie staat er centraal?

Wie staat er centraal binnen het landbouwbeleid vanuit uw perspectief? De boer, overheid, de consument, etc.

- Wanneer u een besluit neemt of een project beoordeelt, wiens belangen wegen dan het zwaarst?

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Algemeen landbouw beleid en samenwerking

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Is Municipality bezig met regeneratieve landbouw en zo ja, op welke manier?

Wat betekent regeneratieve landbouw in uw eigen woorden?

Wat denkt u dat regeneratieve landbouw de regio kan opleveren? En voor wie zijn deze opbrengsten (niet financieel)?

Hoe ziet u de rol van regeneratieve landbouw binnen het voedselsysteem van de ZH Delta in de toekomst?

Op welke manier komen de doelen die Municipality heeft overeen met de doelen die regeneratieve landbouw nastreeft denkt u? En op welke manieren botsen ze?

Wat zijn volgens u de grootste kansen en obstakels voor een bredere transitie naar RA in de ZH Delta, vooral op het gebied van beleid en beleidsontwikkeling?

Visie 2100

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Hoe zouden onderlinge relaties er dan volgen u uitzien?

Wat moet er veranderen om deze visie mogelijk te maken?

Wat zou er worden gewonnen/verloren in zo'n transitie?

Wie maken de beslissingen in dat systeem?

Valideren resultaten document analyse

In een document analyse zag ik een aantal thema's naar voren komen in het beleid rondom landbouw.

Ten eerste, een wens voor natuurherstel. Herkent u dit? En specifiek voor uw eigen organisatie?

- Waarom is dit belangrijk denkt u?
- Wat kan natuurherstel opleveren? En voor wie?

Ten tweede, kwam autonomie/zelfstandingheid binnen de landbouw naar voren. Herkent u dit? En op welke manier?

- Waarom is dit belangrijk denkt u?

- Wat kan meer autonomie opleveren? En voor wie?

Ten derde, werd er vaak over innovatie en experimenteren gesproken. Herkent u dit? En op welke manier?

- Waarom is dit belangrijk denkt u?
- Wat kan dat opleveren? En voor wie?

Zijn er naast deze doelen, andere doelen die ook belangrijk zijn volgens u?

Zijn deze doelen in de praktijk mogelijk volgens u? Waarom wel/niet en op welke termijn?

Overig

Zijn er dingen die ik u niet heb gevraagd, die u wel zou willen delen?

Zou u het transcript willen in zien?

Zou u het rapport willen ontvangen?

Interview for member waterboard

Persoonlijke introductie

Kunt u uzelf kort introduceren en uw rol binnen het waterschap beschrijven?

Water/bodem technologieën in ZH delta

Kunt u beschrijven welke technologieën worden gebruikt voor water- en bodembeheer in de Zuid-Hollandse Delta (zoals gemalen, dijken, sluizen, drainage en dammen), en hoe deze samen als één systeem functioneren in de praktijk, bijvoorbeeld in het dagelijks peilbeheer?

Wat zijn volgens u de belangrijkste doelen van deze technologieën, en voor wie (wiens belang) zijn ze ontworpen?

Beheer

Hoe is de landbouw in de Zuid-Hollandse Delta afhankelijk van het watersysteem?

- Hoe beïnvloedt het waterbeheer de manier waarop boeren werken?
- In hoeverre zijn boeren afhankelijk van het beheer van deze technologieën?
- In hoeverre hebben boeren volgens u ruimte om hun eigen keuzes te maken binnen het huidige watersysteem?

Wie zijn de belangrijkste actoren in het beheer van het watersysteem, en hoe worden keuzes over waterbeheer, zoals peilbesluiten of investeringen, in de praktijk gemaakt?

- Hoe worden belangen van landbouw meegenomen in deze beslissingen? In hoeverre is het watersysteem aangepast aan landbouwproductie?

Problemen

Wat zijn volgens u de belangrijkste uitdagingen in de regio rondom het waterbeheer, met betrekking tot de technologieën, hun beheer en landbouw nu en in de toekomst?

- In hoeverre zit de regio volgens u vast in het huidige waterbeheersysteem (een technologische lock-in)
- Wat maakt verandering lastig: techniek, kosten, of sociale factoren?
- Welke rol spelen processen zoals verzilting, bodemdaling en klimaatverandering in het waterbeheer van de regio? En hoe beïnvloedt dat landbouw?

Interacties met regeneratieve landbouw

Wat betekent regeneratieve landbouw in uw eigen woorden?

In hoeverre sluit het huidige watersysteem volgens u aan bij de principes van regeneratieve landbouw, en waar ziet u verschillen in wat daarin belangrijk wordt gevonden?

- Als u denkt aan aspecten zoals bodembeheer, lange termijn perspectieven of de ruimte voor boeren om eigen keuzes te maken
- Zijn er situaties waarin verschillende doelen of belangen lastig samen gaan?
- Kunt u daar een concreet voorbeeld van geven?
- Hoe wordt daar in de praktijk mee omgegaan?

Op welke manieren maakt het watersysteem regeneratieve landbouw mogelijk en op welke manieren beperkt het?

- Waar merkt u dat in de praktijk?
- Kunt u voorbeelden geven uit uw werkervaring?

Welke kansen en obstakels creëert regeneratieve landbouw voor het technologische systeem? Eventueel hypothetisch: welke kansen en obstakels ziet hij?

- Waar merkt u dat in de praktijk?
- Kunt u voorbeelden geven uit uw werkervaring?

HOE? Kan er meer ruimte worden gegeven voor regeneratieve landbouw binnen dit wat systeem?

Toekomst visie

Stel dat dit gebied volledig zou draaien op regeneratieve landbouw, hoe zou het gebied er dan uitzien? En specifiek het waterbeheer systeem?

- Wat moet er veranderen om deze visie mogelijk te maken binnen het watersysteem?
- Wie maken de beslissingen in dat systeem?

Overig

Zijn er dingen die ik u niet heb gevraagd, die u wel zou willen delen?

Zou u het transcript willen in zien?

Zou u het rapport willen ontvangen?