Waterscapes and the waterschap: using diverse water perspectives to create inclusive sustainability policy in the Groene Hart

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Acknowledgements

First and foremost, thank you to my interlocutors. Thank you for tramping around fields in the wind, explaining complicated concepts to a silly English student, and showing me the landscape that you inhabit. I hope I've done this very special area justice.

Thank you to Marja for your support over the last few years, and for reading some incredibly draughty chapters. I've appreciated our conversations about what is to be done about agriculture so much—I hope you can see some of my enthusiasm in these pages. Thank you to Sander, for reading a draft so speedily and providing such useful (and encouraging!) feedback.

Thank you to Timo for telling me that this project was right for me (over two years ago!) - it absolutely was. I hope that I can provide you and everyone at *Rijnland* with a useful perspective.

For fear of sounding too dramatic, I truly feel like this thesis is the work of a village. I'm so thankful to everyone who has heard me say "does this sentence make sense?", who made me feel cared for, and who has had a paragraph copy and pasted to them in Whatsapp (and replied!). Thanks to Mum for staying on the phone as I wrote in a dark flat alone, and my friends for your guidance (especially Anita). Thanks to Cam and Tabs for your hand-holding. Thanks to my dad and brother, for always cheering me on in things you don't necessarily understand. I love you all.

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Waterways on the outskirts of Alphen aan den Rijn. All photos by Annie Gomm, unless stated.

1.0 Background to the introduction

If you were to read a tourist information website, look through Instagram tags, or even read a municipal Omgevingsvisie, you would be forgiven for thinking that the Groene Hart is a single place, with one industry—dairy farming. We see images of flat land, cartoon green grass, little slootjes, and grazing cows, raised for milk to turn into high-quality, small-production cheeses. The myth of this Groene Hart pervades the way it is discussed in popular culture and in policy, reflecting the aims of spatial planning policy from 75 years ago—green, rural, arable. This space does exist. Sometimes, we see this exact scene, on a warm spring day or a drizzly summer afternoon, but often we don't. The Groene Hart is also a place of muck spreading and greenhouses, dwindling social housing stock and eye-wateringly expensive villas, renewable energy initiatives, and warring neighbours. The notion of the 'Groene Hart' is not one thing, but it exists almost as a spectre, haunting policy and planning values held by municipalities, landowners, and the national government.

Often, the 'blue' of the Groene Hart is forgotten, skirted around by engineers and policymakers and hidden in the background of planning decisions. Still, water is very much present in the area, not just in flowing grachts between fields and wider canals next to roads, but flowing under the ground in aquifers, keeping peat alive and stopping the land from subsiding (Akkerhuis, 2020). It is also an obstacle—to intensifying farming with yet heavier machinery, for example. Water buoys the land, and affects how people interact with it—in light of this, some anthropologists call for landscapes to be known also as ‘hydroscapes’ (or 'waterscapes') to account for the way that humanity and water are interconnected (Hastrup and Hastrup, 2017). The urgency of recognising water's importance grows with land subsidence, which in the Groene Hart has an average rate of 1 cm a year. If this continues, water will be unable to flow down to the sea, and saline aquifers might be breached, making land cultivation impossible. Throughout its existence, *Rijnland waterschap* has followed the approach of making the land (and water levels) fit what the population want, a policy that is starting to change, albeit slowly. This is an obligation that is strengthened through the reserved seat system[1]. This has meant that water's importance has often been forgotten by the wider population.

An erosion of government agencies built from creeping neoliberalism and austerity means that there are now reduced central planning directives and the waterschap is required to take a more active role. Simultaneously, waterschap budgets continue to be cut, even though the physical existence of this country relies on water control. While other sectors are cut, the agricultural industry remains heavily subsidised throughout Europe (Harvey, 2005). Traditional farming makes great demands of the air, land, and water, and its contributions to climate change have been criticised. The 'incompatibility' of farming and sustainability is an emotional issue for many people, as the farming profession has deep emotional links, especially considering its deep links to the area (Holloway et al., 2021). Over the past 40 years, however, farming has been intensifying, and the business model has made greater technological and financial demands on the farmer, while making increasing environmental demands on the planet (van der Ploeg, 2020a). Farming, and water levels lowering results in land subsidence, emissions from peat drying out are high, and the danger of hitting saline water below ground level remain very real challenges (Akkerhuis, 2020). Increased water usage for intensive crop and animal agriculture has also worsened climate change-driven drought over recent years (Philip et al., 2018).

[1] I will reflect on this later, in part 2.1, on the structure of water boards. The reserved seat system effectively gives certain stakeholders double representation in policy decisions. Democratically elected seats vote in line with party policies, which can combine with allocated seats which always vote in line with the interests of farming (four seats), industry (four seats) and sustainability (which has one seat).

The political climate of the Netherlands means that often, the only acceptable climate solutions must fit within a capitalistic, neo-liberal framework (Hajer, 1995). This neoliberalism is embedded at every level of institution in the Netherlands (van Apeldoorn, 2009). A huge part of the Dutch economy relies on this model, especially when it comes to rural issues—the Netherlands is the second largest exporter of agricultural products in the world. In national identity, great emphasis is placed on the cultural value in the appearance of the countryside (van Koppen, 2015). Even as the climate crisis deepens, and awareness is high, people are not necessarily motivated to act in a more sustainable manner (Norgaard, 2011).

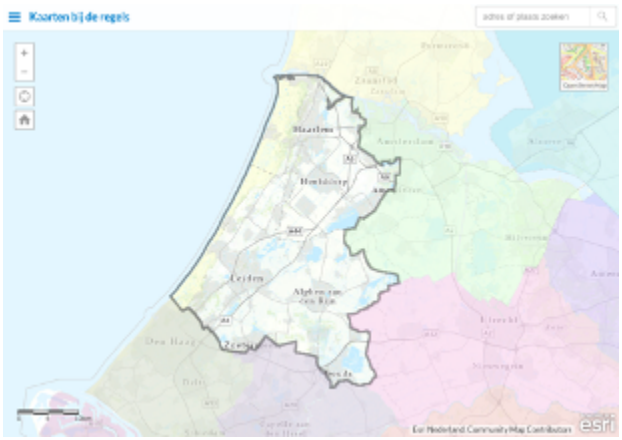
In order for the water board to create a more sustainable policy for the future, one that includes the blue as well as the green, water (and interpretations of water) needs to be brought to the forefront of policy and research in the public imagination. This is core to the aim of my research and thesis. Bringing water to the forefront, I believe, means viewing the area as a 'waterscape' as much as a landscape. The way that people view the landscape is the way that they view the future of the countryside—when people voice the way that they want the landscape to be, they are describing a certain future. The future is something we create, and if we are to *create* a better future, we must start by *imagining* a better one, conveying this to those around us, including those that we agree completely with and those that we don't. These conversations are frustrating and can seem useless, but they are essential if we are to create a more sustainable future for the Groene Hart and for the world. There is a huge amount of crossover in water-related challenges, and these interconnections between issues makes studying the Groene Hart both vital and complex. Throughout my thesis, there are cross references to other areas of the thesis where themes mentioned briefly are developed in more depth. I hope that these serve both to allow the reader to easily go to this section for their better understanding, and to highlight interconnectedness.

I hope that this research will emphasise the need for water to be at the forefront of land- and waterscape policy, from all positions, but especially those concerned with a more sustainable future. This aim is particularly important for the *waterschap* when reflecting on calls for more representational governance alongside the changing structure of the water board, to one without reserved seats. The challenge of this thesis, therefore, is how to create a sustainability policy for the waterscape that accounts for huge ideological differences between stakeholders. After covering different tension points in the conflict section, and passing into the final chapter, I

question whether making compromises and bridging gaps is possible or even desirable. My research question evolved over time, as I describe in section 1.4, but at its core, the question has remained as "how do different groups perceive and value the Groene Hart, and how can the *waterschap* account for differences in perceptions in creating sustainability policy?".

1.1 Overview of the area

Map of the Groene Hart, with cities shown in pink. Amsterdam is to the north, Den Haag to west, Rotterdam to the south west and Utrecht is to the east (wikimedia commons, n.d.).



Hoogheemraadschap van Rijnland's area of jurisdiction, covering most of the Groene Hart. (rijnland.net, n.d.)

1.2 Theoretical Framework

This project is expansive and requires many layers of understanding of landscapes, waterscapes, water and power dynamics in a localised space. In order to understand how factors interact, an assemblage perspective is useful. Li (2007) brings together notions of assemblage and resource governance in an ethnographic analysis of community forest management. She describes six practices instrumental in any assemblage, which are forging alignments, rendering technical, authorising knowledge, managing failures, anti-politics and reassembling. Through this theoretical lens, different actors are brought together in a heterogeneous assemblage, and all have conflicting visions and priorities for the space, having different objectives that may be in conflict with one another (for example, making profit rather than resource protection). The resultant assemblage can appear complete and settled, despite its many disparate components. But through looking at management as an assemblage, we can see how the composite parts may be able to cohere or not. In some cases, this is not possible, as I will explore later, there will have to be a "solutionscape" (Fallon et al, 2021) for effective governance, as opposed to a single solution that will please all actors. This following section addresses this in the themes of landscape values, water and water governance and how this interacts with sustainability. In order to understand how entwined water and land management is, I argue that the Groene Hart is best understood as a 'waterscape', rather than simply a 'landscape'.

1.2.1 Water- and landscape values, human-environmental relations

Though I believe that issues in the Groene Hart should be understood as a waterscape, because water makes the landscape, I will first reference landscape values and human-environment relationships. The study of landscape values forms the basis of waterscape knowledge (Flaminio, 2022), and is vital to understanding how relationships between people, places and their surroundings are established.

In order to have more representative governance, we must first understand how people perceive and value landscapes and the environment. This is often varied—Strang describes how two groups of interlocutors conceive of the same place so differently that though "they move through the same world, they are not in the same place" (1997: 4). This quote encapsulates the tension at the centre of my thesis. Different stakeholders in the Groene Hart see the place differently, even as policy and planning discourse largely consider it one space.

In place-making theory, physical, mental, and social space are three inseparable levels of thinking about a single space. Lefebvre (1991) describes a triad of levels of considering space: the perceived space, the conceived space, and the lived space. Firstly, space is something that individuals perceive and shape through their interactions with it. Secondly, he argues that all space has diffuse authority throughout it, and this affects how space is conceived of by those dwelling and acting upon it. Finally, space is the lived experience, encapsulating how perceived space and diffuse power combine to create the way that people think of and move through a space. Soja (1996) echoes and builds on this, arguing that the three spaces are physical spaces, conceived spaces, and lived experiences. He extends this theory into the imagined world, saying that our experiences of the real and imagined world can blur, forming what we imagine to be one 'space'. People make landscapes, both in their own minds, and through diffuse power structures happening to and with the land. This process as described by Lefebvre is dialectic—a state of creation flows both ways, between the individual and the environment, the creator and the created.

Soja describes both his and Lefebvre's perspectives as the need to "make life-stories as intrinsically and revealingly spatial as they are temporal and social" (1996: 7). This is part of what ethnography of space, landscape, and environment is attempting to capture—what can we learn about spaces and peoples' relations to them by taking this spatial aspect of their lives seriously? What are we missing out on by not taking competing visions of landscape seriously? Both Soja and Lefebvre argue that the lived experience of a space is a deeply particular thing and should be examined at every level. Harvey (1989) expands on this, arguing that Lefebvre's three dimensions of space are all dialectic, building on and inseparable from each other. Harvey (1989) uses Bourdieu's concept of habitus to explain this interlinking, saying that habitus “produces practices” which in turn tend to reproduce the objective conditions which produced the "generative principle of habitus in the first place" (p.219).

Landscape cannot be isolated from the people in it (Guo, 2003; Hirsch, 1995). Studying place-making discourse brings together materialist and symbolist perspectives, including political, economic, and cultural values in readings of landscape (Guo, 2003). As with Lefebvre and Soja's theories, this is a dialectic relationship—as people make landscape, landscape makes people. Even in an increasingly globalised world, there is still an incredibly localised sense of place and space (Escobar, 2001). This deepens any disagreement, and all perspectives must be taken seriously in policy decisions. It is vital that the water board

understands the opinions of their stakeholders, and this is even more pronounced when they have a mutual deep concern for the land, even if there are huge divisions within their concerns.

Space and place-making is something that is continuously practised, and is tied to identity and occupation. The experience of landscape is embodied; landscape is something that takes shape as we encounter it (Harvey, 1989; Jones, 2003). Feld and Basso describe how the process of “dwelling” in a landscape produces a particular relationship to it—dwelling, they write, “is not just living in a place, but... [involves] fusing setting to situation, locality to life world” (1996: 8). When people work with an area, to ensure water does not flow through it, working soil to become fertile, working around the weather to drive machinery and ensure cattle are safe, this work ties them to the land and waterscape. Occupation affects how people imagine landscape, whether this imagining is "close grained" or "distant and half fantasised" (Bender, 1993: 1). Oppositional identity in relation to landscape is developed by Strang (1997) through an exploration of Indigenous and white cattle farmers in Australia, and how the same land is named, treated, and imagined as different spaces by two groups, often in opposition to the other group. This analytic framework has ramifications for how we consider who we take seriously when it comes to speaking for landscape—identity affects how an individual sees the landscape, an identity that is shaped in turn by the ‘others’ in an area.

Alongside landscape values, it is worth considering human-environmental relationships more broadly, especially in the context of the waterscape. Latour writes that "people differ not only in their culture but also in their nature, or rather, in the way they construct relations between humans and non-humans" (Latour, 2009: 2). Through economic conceptualisations and management responsibilities, caretakers of the land form highly specific relationships with both land and water on the basis of their responsibilities (Dubash, 2004). O'Connell and Osmond (2018) call understanding farmer behaviour the 'pot of gold' of Agro-Environmental Governance. In the Groene Hart, there is conflict when it comes to declaring who is a legitimate caretaker of the land, a fraught relationship worsened by the economic pressure that many farmers and other caretakers are under (van der Ploeg, 2020a), and changes in landscape in Dutch planning policy to represent changes from an agricultural land use to a tourist-oriented one (Doevendans, Lörzing & Schram, 2007). This change from land being interpreted as agricultural to a site of leisure has happened around Europe (Buijs et al., 2006), and can be uncomfortable for those in the countryside. Allen (2011) writes that there are "innate" links between those viewing the landscape and the landscape itself, and actor-network theory (as posed by Latour, 1996)

acknowledges these multiple links between people and landscape. He argues that landscape studies through the lens of actor-network theory are compatible with the dialectical approach taken by Soja, Lefebvre and Harvey, but that using this perspective, landscape becomes "a space irrespective of scale where things (human or nonhuman, conscious or nonconscious, single or group) take place" (Allen, 2011: 278). This is building on Soja's assertion that the plurality we see in landscape values is based on 'socio-spatial dialectics' (1980).
Here, we see how people develop relationships with landscapes, and come to understand places as meaningful. Both landscape studies and the waterscape perspective "integrate spatial processes in the study of the coproduction of social and natural orders" (Flamino et al, 2002: 2). Both are vital to to understand conflict in the Groene Hart, and therefore create more inclusive water governance.

1.2.2 Water

> *"water, as an emergent property of the immediate and place-based landscape, is a commons; at other sites, with their manifestations of a commonality, there will be related (but different) emergent properties in their relational assemblages"* (Beilin, 2018: 225-226).

As I described in the previous section, landscape values are formed through place-making practices, reinforced with identity and occupation. There is something different about water; here, I will look into ideas on how entwined water and landscape is, and how we encounter water sensorially. In light of this, I argue that water is so integral to the Groene Hart that the area forms a 'waterscape'. The above quote shows how water can both exist as a resource, and depending on context and conflict, can change to becoming other things—a nuisance, point of conflict or asset to the landscape.

Much of Dutch epistemology around water as a commons revolves around perceived mastery over it (Büscher, 2019). Ideas of domination often conflict with sustainability, though Gerlak and Mukhtarov (2014) argue that social ways of knowing water and technical ways of knowing water can complement each other, if seen as part of a relational assemblage. This perspective is something that I (and Rijnland water board) hoped to find, but can be difficult in the Groene Hart. This conflict in ways of imagining water also forms an assemblage, albeit a less harmonious one. Untangling this assemblage is at the heart of this project, and the aims of Rijnland *waterschap.*

We think of water differently from land—it is what gives the land features, is around us and in us, as the foundation of human life (Strang, 2004). The boundaries between land and water are blurry, and increasingly, landscapes are coming to be thought of as 'hydroscapes' (Hastrup and Hastrup, 2017), or 'waterscapes' (Swyngedouw, 1999; Karpouzoglou and Vij, 2017). Strang writes that "as the substance that is literally essential to all living organisms, water is experienced and embedded both physically and culturally" (2004: 4). Our thinking around water must encompass its core elements, the way it flows and how this changes the way people encounter it relative to their proximity to power in society (Ballestero, 2019). Even when it seems still, motion is core to how water exists (Strang, 2004); in the case of the Groene Hart, water is suspending land, seeping into canal walls, and lying below the ground in saltwater aquifers. Bakker describes water as being both socio-natural and socio-technical (2012), existing within the perceived environment and being managed in a socially revealing way, for example, when maintaining water levels for farming or otherwise, priorities are revealed (cf. Collier, 2011). Water flows without paying attention to boundaries or jurisdictions, and so "hydro squabbles" (Warshall, 2001: 40) can be exceptionally contentious, as disagreements cannot account for water's locations.

The term "waterscape" was first used by Swyngedouw (1999) to describe the modernisation of Spanish water infrastructure, and aimed to show in a single word how entwined water and society are. Since then, cultural ecology has used the word to show how blurred and enmeshed the boundaries between society and water is (Karpouzoglou and Vij, 2017), and is compatible with other theoretical perspectives within water relations, such as the "hydroscape", and governance perspectives (ibid.). Water flows through landscapes that are physical, theoretical, symbolic and social (Baviskar, 2007, in Karpouzoglou and Vij, 2017), and can encapsulate macro and micro level interactions with water in an area (ibid.). Flamino et al define waterscapes as "the spatial translation of long term socio-ecological processes involving water" (2022: 18). They define the hydrosocial territory as useful to "unpack the wide range of multiscalar hydrosocial relations" (2022:18). Using their distinction, therefore, the Groene Hart *is* a waterscape, within which we also see hydrosocial relations play out—the difference is subtle, and there are many crossovers between definitions.

Understanding the sensory experience of water is also key to understanding how people conceptualise it. Culture shapes peoples' interactions with water (Strang, 1997), just as those

sensory experiences shape meaning-making in relation to water and landscapes (Strang, 2005). Strang (ibid.) asserts that there are universalities in human experiences, specifically with the way that we interact with water. She calls for a "reconciliation" between "physical, sensory and cognitive potentialities" that all people have, and the material and cultural context that people "inhabit and construct" (2005: 93). 'Meaning' is a shared cultural product, even as the meanings that people form diverge. Relations with the environment are shaped by prior education, community, and identities (Strang, 1997). Strang argues that some universal reactions exist, though: water is essential for all of our lives, and for the most part, we are calmed by its presence (2005), unless it is seen as being a threat, or "matter out of place" (Douglas, 1966: 44). For example, water also affects how the landscape is interpreted, with inhabitants describing how in the flat landscape of the Netherlands, water enhances feelings of spaciousness (Coeterier, 1996), proving, I would argue, that the place is a waterscape. However, the way that we know water, in the West, is often trapped in "scientism", which "creates a trap of concrete evidential certainty" (Lahiri-Dutt, 2020: 113), and in the Netherlands as a technical problem to be solved. There are various calls to letting non-humans in the environment 'speak', but in the Dutch context, this non-human agency is mediated by institutions entrenched in one particular view of science—Lahiri-Dutt writes that it is dangerous when this particular epistemological context is taken as objective, rather than particular[2].

1.2.3 Water governance

The way that we encounter water has ramifications for how we think of it, but beyond this, there are specific needs for governing it too. In this section I give some context to water management, and describe how the type of governance that is possible depends on the context, and in one as fraught as the Groene Hart, partial solutions may be the only thing possible.

We are land-dwelling creatures whose lives rest on water, and a balance is essential for survival. Beyond the need to ingest water, the extent to which our lives rest on it can be forgotten. In the Groene Hart, we forget that it buoys the land we live on, that there are great networks of aquifers and dunes through which water flows beneath our feet. We can forget about the moisture in the air that is essential for breath. Life is a waterscape, and this waterscape is often forgotten. Especially because recalling it, acknowledging how the water holds memories, can be inconvenient in planning and in engineering decisions.

[2] Tsing et al (2019) also highlight that we should think of all epistemological contexts as cosmologies, as opposed to one reflecting an objective 'truth' and others not.

Water governance is especially tricky because of how enmeshed water is with society (Challies and Tadaki, 2022; Fallon et al., 2021). Barnes and Alatout (2012) describe how, in the Israeli context, water can become many material things over the years, depending on the context and "assemblages it finds itself" (485). Within different assemblages, water has been "borders, a resource for regeneration... material linkages between past and present" (ibid.). Here, water both finds itself in assemblages, and becomes part of the assemblage, an actor determining how power dynamics play out. Bakker's work describing water as both socio-technical and socio-natural (2012) builds on this; interpretations of water are different depending on context and actor. Using this framing, in my research, water can be an agricultural necessity, nuisance, border of fields, burden of maintenance, and matter of pride, depending on where it is, in what amount, who is perceiving it, and what personal relationship they have with the land and water.

Water is governed and governs. Anand et al (2018) discusses how water creates and builds citizenship in Mumbai, as people define themselves by their access to and conflict over water. Water management (and thus land reclamation) can be what Rasche and Köhne describe as a "site of citizenship" (Isin, in Rasche & Köhne, 2016), wherein people can engage in what they see to be a societal issue, which speaks to what it is to be Dutch (Mostert, 2020). This view is emboldened by the democratic and increasingly participatory nature of water boards (Behagel and Turnhout, 2011). Linton and Budds describe the "hydrosocial cycle" (2013: 179), a frame of analysis that involves moving beyond ideas of simply governing water into a more dialectic one, wherein water is both made by and makes social conditions. Water, they write, should be examined in the context of how water is thought of and made known, and the way water "internalises social relations, social power and technology" (2013: 179). The result of this is that the hydrosocial cycle "implies the presence of different waters in different assemblages of social circumstances" (ibid.: 179). These theories all emphasise the importance of understanding the complex issue of water holistically.

Often, the best solutions are complex and imperfect, and more simple 'solutions' can throw up more problems than they solve. Head (2010) describes how, with "wicked" natural resource problems, or those with many angles and constraints, 'simple' technological solutions are unsatisfying. If policy makers consider how diverging perspectives, values and causes build a complex (wicked) problem, and apply this thinking to creating complex solutions, these may be more acceptable. Head also writes that transdisciplinary approaches are essential to

understand stakeholders, the problems, and policy makers themselves. He writes that "modern society is too pluralistic to tolerate imposed and artificial solutions" (102). Challies and Tadaki describe how state and non-state actors must work together to solve water issues, and different "capacities, competencies…and collaboration" of different communities must be brought together (2022: 6), this kind of talk being at the heart of the water board's aims (and thus at the heart of this thesis!), aiming at illuminating how differing expertise may deal with water troubles.

Problems that need pluralistic solutions cannot be fixed with simple, technological ones. Practitioners can name an issue as "complex" without giving insight into the nature of that complexity, and without attempting to apply solutions to water governance (Moore, 2013). Effective solutions, however, often form a 'solutionscape' (Fallon et al (2021). They write that water governance is tricky because of how often beliefs diverge and conflict, particularly because of how closely tied water is to society (ibid.). Stakeholders hold differing "values, goals [and] interpretations of the problem, its causes and how to tackle it" (ibid.: "Introduction", para. 3), and these stakeholders hold different amounts of power, further complicating issues. Their writing makes it clear that there is not one final solution to water issues, and none of the mechanisms for policy change should be thought of as perfect. Instead, there is a varied terrain of possibility, which can be mapped and reflected upon, and should be conveyed to stakeholders as such, rather than as a prescriptive solution that will appeal to everyone. They classify solutions across axes of balance and cost, and describe how, in a context of ongoing, changing circumstances (their example is Doringlaagte in South Africa, but it is also the case in the Groene Hart), partial solutions can be a "useful and catalytic step" towards a holistic solution. In this situation, solutions are more of a case of how "people, technology and resources ally together (or do not) in response to wicked water problems" (2021: "Discussion", para. 1). "The solutionscape suggests that governing wicked water problems is less about seeking optimization to a preferred single outcome…, and more about asking stakeholders to map out their contestations and deliberations." (2021: "Conclusion", para. 3) They call for a plurality in understanding, as the water board does (and this thesis aims to contribute to), but also emphasises the importance of plural, imperfect solutions to complex problems. All of the above scholars emphasise that with water governance, there are no quick, total fixes.

1.2.3.1 Water Governance in The Netherlands

In the following section, I will build on more general perspectives of water governance, describing its importance in the Netherlands. As I will show, there is a lot of pride in the water

system, and as rising sea levels create an increasingly difficult context for it, tactics of water governance are changing to emphasise stakeholder participation, but this comes with difficulty, too.

Questions of water governance are especially relevant in the Netherlands, with the saying "God created the world but the Dutch created the Netherlands" demonstrating the extent of presumed Dutch mastery over water. This is an image of trust that the water board relies upon in order to function, but also throws up problematic connotations for assertions relating to how we govern a material whose flow is at its core. Büscher (2019) writes how imagineering is a concept that can be applied to Dutch management of the waterscape. As the Dutch assert their dominance in the management of water, over hundreds of years of making sure that the Netherlands stays dry, they 'make' a future where this is also true. He emphasises the work of the Dutch water management bureau, but these tactics can also be seen in the consultation process of the water board, as I discuss later. He explains his use of the term 'imagineering' as a recognition of the dynamic processes of the imaged waterscape, one that is dialectic and performative. The process of highlighting imagineering makes visible the political aims of engineering, even when the process appears neutral. Outside of water, this could be linked to the idea of manufactured consent (see Govind and Babu (2017) for how manufactured consent can be seen in a participatory governance water management): in other words, how when propaganda creates conditions wherein the population ends up viewing something as normal and consenting to it, which without the propaganda they would not otherwise. This is not necessarily nefarious, and is something that the waterboard wishes to integrate into policy moving forward, with projects such as this one. Büscher quotes a project manager in a dutch engineering firm, saying "delta planning is all about the art of seduction; creating a fairytale of how the future might look like in a hundred years" (2019: 829), the 'fairytale' that Rijnland waterschap want to create is one of sustainability, so that the area can thrive in the next fifty years.

The task of water governance in the Netherlands is a constitutional requirement, falling under chapter 21 of the constitution. The waterboards are part of a tapestry of actors working to ensure this outcome, alongside, for example, the national government (who are responsible for the maintenance of the coastline, among other things) (Havekes et al, 2004). This role has changed throughout the past 70 years, as described by Turnhout (2004). She notes the impact of different political turns, from the setting of ecological standards in the late 1970s, and deregulation and the creation of so-called ‘win-win’ situations for the government and business

in the 1980s (which, as we see in Brandt, Josefsson and Spierenburg (2018) are rarely actually win-win) (ibid.). Under this deregulation, state-controlled regulation decreased, and there was a turn from ‘source oriented’ to ‘effect oriented’ policy. When faced with the issue of acid rain, for example, governments focussed on the effects, rather than tackling the origins. These origins were diffuse and difficult to identify, but by not dealing with them, progress was slow, and effectiveness reduced compared to if the strategy had been Europe-wide and cause-based (Turnhout, 2004). This poor management of a shared resource can be applied to water management issues, too.

Kamperman and Biesbroek (2017) assessed Dutch waterboard responses to climate change, arguing that though in the period between 2006 and 2016 the recognition of climate challenges increased, these policies were often at the beginning stages. This is especially pertinent because the institution has a democratically elected wing, and strategy can be confused by the need for (re)election. "Short-termism" in politics is not new, but with the increasing urgency of the climate crisis, the repercussions of this presentist bias are heightening (Boston, 2016). However, water boards also have "an institutional responsibility for long-term water management" (Pot et al, 2022). Pot et al (ibid.) examined how everyday practice within a water board can deal with long-term issues such as climate change (or not!). They write that in order to become more forward-thinking, water boards must emphasise proactive change over a long term basis, as well as encourage stability and ensure the realisation of objectives, on both a macro and every day level, which seems incompatible with shorter election cycles. Van der Heijden and ten Heuvelhof (2012) describe how participation in Dutch water governance is often seen as unwaveringly good, but in order to be successful, it should be viewed as a mechanism. This is especially relevant when considering levels of trust in institutions (see section 4.1 for more). Also, they write that attempting to have a pluralist understanding of water issues in the 'corporatist setting' of the Netherlands is incredibly problematic (van der Heijden and ten Heuvelhog, 2012). Though this thesis and its recommendations adds to the slew of policy at fledgling status, this groundwork is necessary in order to create viable sustainability policy moving forwards.

1.2.4 Sustainability

In order for the water board to understand what it means to be sustainable, we must first understand what sustainability is in The Netherlands. Many interpretations of sustainability in the Dutch context rely on a capitalist lens, and more specifically, the capitalism of neoliberalism.

I also briefly discuss environmentalism that lets the environment 'speak', and how this is often in conflict with perspectives in the Groene Hart.

In the Netherlands, emphasis on economic growth means that sustainability is often neglected. Despite this, the Covid pandemic has shown how resilient food systems, rather than economic growth, is a cornerstone in society's continuation (van der Ploeg, 2020b). Sustainability in the food system in the case of the Netherlands means degrowth, with "re-localised and integrated food systems logic" (Nelson and Edwards, 2020: 2). The Netherlands is one of the most intensive food systems in the world (van der Ploeg, 2020b), and it is the second largest agricultural exporter in the world, behind only the US (Ing, 2019). Output in terms of land is the most efficient in Europe but remains incredibly high in terms of emissions and impact on the land (van Grinsven et al., 2019). Any changes to the expected output of farmers are often interpreted as being an attack on the agricultural industry, so is strongly opposed (van der Ploeg, 2020a). Many discussions about the need to end, or slow, agricultural output are also clouded with the perceived need to produce more food (Bos, Smit and Schröder, 2013)—an oft-cited hangover of 1944's Hunger Winter, where around 30,000 Dutch died as a result of malnutrition under Nazi occupation (van der Zee, 1998). According to figures from the European Investment Bank (EIB), 47% of Dutch people polled in the 2021-2022 Climate Survey believe that technological innovation is the best way to fight climate change, as opposed to 41% who believe that radical change to individual habits will be more effective[3]. Despite much emphasis on the need for technological innovation to help ‘solve’ the climate crisis in the Netherlands, Hajer (1995) criticises this neo-liberal resistance to not changing the existing socio-economic system. As Harvey (2001) describes, ecological upheaval and conflict can also be a time for sweeping social changes (see also: Dahlet, Himes-Cornell & Metzner, 2021). Despite early definitions of sustainability that explicitly demarcated social sustainability as a core aim, over time this has declined (Vallance, Perkins and Dixon, 2011). In order to be able to govern over a heterogeneous population, we must understand how varying stakeholders hold different notions of what the landscape is, so that we can help them envision what a more sustainable landscape could be.

To think of landscape and ecology outside of the capitalist lens, a radical paradigm shift is needed (Sullivan, 2009), because he argues keeping it within economic terms and thinking of

[3] Caution is required here as 12% selected "neither of these", and there was no option for systemic change (EIB, 2021).

ecology as a service provider signifies “cultural poverty” (2009: 18). While it can be worthwhile to describe land in economic terms as it conveys the general sense of value and power relations to nature of the social order, land and environment also exist separately from this (Harvey, 1993). In Dutch agriculture, however, relationships with the land are often highly economic, with high levels of debt causing mental strain on farmers (van der Ploeg, 2020a). Under this normative, capitalist thinking, we find discourses of ecoscarcity, or beliefs around the idea that nature is a resource that we are ‘running out of’. But rather than this being a fixed reality, it shows that “we have not the will, wit, or capacity to change… that we are powerless to modify ‘nature’ according to human requirements” (Harvey, 2001: 40). Harvey concludes instead that if the sustainability movement pays attention, environmental change can be the driver of social and political change, and vice versa (ibid.). While sustainability means different things to different people, it often remains tethered to the economy, to ideas of debt and preservation of the world, as opposed to regeneration, which could be outside of capitalism (Tsing, 2015). However, this reframing of global issues is challenging; one oft-cited quotation is that "it is easier to imagine the end of the world than the end of capitalism" (Fisher, 2009: 1).

Plumwood (2006) stresses that we should not accept degradation of the environment as a cultural given—we must respect ecological autonomy. She describes her perspective as one that is “open to experiences of nature as powerful, agentic and creative, … [and makes] space in our culture for an animating sensibility and vocabulary” (Plumwood, 2010). Some cultural landscape readings emphasise ecological scepticism, where emphasis is put on how much interpretations of the environment differ, rather than the extent of environmental degradation that is happening (Plumwood, 2006). Writing on different understandings of nature, Descola emphasises that for biodiversity to be preserved and encouraged, “plurality in the understanding of nature” should sit at the crux of policy (2008: 1). The planet must also sustain us, and for this to happen, there must be drastic changes in how we live within it and the stresses we impart on the natural world.

Looking at these conflicting perspectives on sustainability in the broader sense, as well as the difficulty in managing water issues, it is clear that the challenges of the water board are massive. Strang (1997) discusses how visions of landscape differ between Indigenous and white settler Australians, an area where there are distinct differences between cultures, and a clear power dynamic. In the Groene Hart, power dynamics are less obvious, and proximity to power is often confused and debated (especially in who feels supported by the authorities). With

this, ideas such as who has a ‘legitimate’ claim to the landscape are fraught with debate and are highly relevant to examining how water and landscape is considered. My research considers how diverging values of water and sustainability can interact with creating a future of more sustainable water resource management.

This question of water values is central to my research, which considers how more sustainable water governance is possible in a climate of conflict, disharmony and stakeholder stubbornness. In interviews I learnt how entrenched many peoples' ideas are, and how many communities reinforce specific ideas of what is possible for the future. Seeing this, I saw how important an assemblage perspective was—through this, there is room for different actors (including the environment itself) to 'speak', without the prioritisation of one voice over another.

1.2.5 Environmental Governance and assemblages of power

Looking at the previous sections on waterscape values, water governance and sustainability, we can see how many perspectives build to form a varied understanding of Groene Hart's waterscape, and possibilities for the future. Together, this is a heterogeneous whole, a network of knowledge, values and understanding. This whole, in turn, is interpreted by a range of actors, a complicated network of agencies, governments (municipal, provincial and national), peer-network groups and individuals. To understand this situation, an assemblage perspective is useful. This framework allows webs of knowledge and value to be taken seriously, without trying to establish dominance. I believe that this perspective is imperative to the water board's desire to understand its constituents.

In future governance, the water board must consider conflicting ideas of water, landscape and the natural world, so must understand the assemblage of power and how stakeholders interpret it. As institutions overlap, a contingent 'whole' does not necessarily form (Allen 2011), and experiences of these assemblages are totally heterogeneous. Allen writes that engaging with assemblages of power "should open up new questions, as well as new forms of engagement" (2011: 156). I aim to contribute to these questions in this thesis—how can the work of the water board be aided by a more in depth understanding of the population that it governs? What does this mean for the manner in which various actors encounter water, and subsequently the way that they establish effective and sensitive water governance, aiming towards a more sustainable future? The concept of an assemblage of governance is even more powerful considering the role of neoliberalism in governance practices—the erosion of the state (and state-led planning

directives) means that there are growing numbers of small agencies holding power and influence in disparate aspects of water management.

Tadaki and Sinner, 2014 write that environmental governance is inextricably linked to values. They deal with an issue inherent to the mission of this research - between placing incommensurable frameworks (such as understanding 'worldviews' or other qualitative values) within a system that expects quantifiable results (a metric which the water board is judged by). They argue that these aims do not allow for an exploration of human-environmental relationships beyond what is easily measured. What's more, institutions such as the water board need to be mindful that representing data is creating it, including which stakeholders are listened to, and which data is deemed to 'count'. The advantages of applying assemblage theory to an issue as highly contested as water in the Groene Hart are numerous. It brings to light how power dynamics are constantly territorialised, how they are highly particular to context, and how a variety of actors create a patchwork of power.

Assemblages are constantly territorialised (Forney et al, 2018), and power moves through "configurations and identities which are immediately contested and destabilised", as actors "human and non-human… engage in struggles and attempts to coordinate the assemblage to fit complex objectives" (2018: 8). Ong and Collier describe an assemblage as having many features which can't be reduced to a single logic. They say that a key feature of an assemblage is that it has many features that can't be reduced to a single logic. They describe how an assemblage is something that "emerges", and is constantly "shifting" (2005: 12). Assemblage also allows for the wildness of non-human actors to form part of analysis, and be acknowledged by theory (Tall and Campbell, 2018). We see from Head's (2010) discourse on water as "wicked problems" how pertinent this is. Tall and Campbell argue that water is inherently unstable (2018; also Strang, 2005), and inherently political due to the complexities of biologies and actor interfaces, such as between farmers and waterways. Water governance is subject to "vital materialities and unknowable totalities, resulting in many bounded, partial and temporary fixes" (2018: 173)—as uncomfortable as it is, these temporary fixes may be part of the solutionscape of the future (see Fallon et al, 2021).

Tsing (2019) describes how many of our difficulties in the anthropocene are 'patchy', and reliant on varied systems of "ecology, capital, and the human and more-than-human histories through which uneven landscapes are made and remade". She uses the term "patches" to describe how

we see tensions and relationships of different phenomena play out in certain landscapes. These landscapes are locally made and globally linked, and the Groene Hart is one such place. It has been shaped through Dutch interaction with water for hundreds of years, affected by global and local flows of capital, the waterscape has had local and global history impressed upon it. Different people have different levels of impact on the natural world, and Povinelli (2017) argues that ‘anthropocene’ is not an appropriate term to describe a humanity whose differing natural ontologies result in different impacts on nature (ibid.). Tsing et al, however, write that the anthropocene calls us to concentrate on "specific landscape histories and structures" (2019: s187), not just use the planet as a core unit of analysis. Instead, we should look at how different material realities interact and affect other aspects of natural life, using the term 'anthropocene' critically and with caution. These perspectives, of a patchy anthropocene, assemblage of power and solutionscapes, shaped how I developed my research, deepened my understanding of what it is to be in the landscape, and how the water board should consider multiperspectivism in their policy. Tsing et al (2019) also deny that anthropological, sited study is only useful in analysing a particular place, arguing that "everything is arguably different in every place now" (s187). My research, and its emphasis on the waterscape, is therefore useful in contexts outside of the Groene Hart, to other areas with fraught water relations.

Bringing this discussion back to the question of mutual resource management, Li (2007) argues that in the management of a forest, agents and objectives are brought together in an assemblage. This has six practices, which are “generic to any assemblage” (2007: 263), but which are particularly relevant to management of the commons[4]. These six characteristics are useful to understand the difficulty of governance despite good will, and she emphasises that these are not moral judgements on characteristics of the assemblage. She writes that the assemblage often feels complete, but, in line with Forney et al (2018), is contingent and shifting, a continuous work. The six generic practices, which I will consider as this thesis progresses, are as follows. The first is forging alignments, wherein the assemblage links objectives and stakeholders, at various levels. The second is rendering technical, or how attempts are made to remove the problem of governance from the social world, into questions of technology. The third is authorising knowledge, or how the assemblage has so-called legitimate sources of knowledge, and shuts down dissent. The fourth characteristic is the management of failure and contradiction, or how failures are presented as technical, making contradiction seem superficial

[4] The commons are defined as "resources held in common, such as oceans, rivers, air, and parklands" (Feeny et al., 1990).

and problematic, as opposed to core and inherent. In this case, as with poldering, which I will describe in section 4.1, Li writes that compromise is emphasised (2007). The fifth characteristic is the process of anti-politics, in which the scope of politics is limited, while paradoxically politics is emphasised as a barrier for governance. The final characteristic is one of reassembling, where key term use is changed, and characteristics of the assemblage, which reifies its changing nature, even as stakeholders can assert the fixed nature of the assemblage. Though the assemblage is thought of as a single 'thing', it is many things at once. In Li's work, as in the Groene Hart, there are multiple agencies and stakeholders trying to make sense of an issue (which is actually a web of interlinked and overlapping issues). In this thesis, I show how the assemblage of the waterscape in the Groene Hart remains difficult to govern, and cast light onto why this could be. Through using this assemblage perspective, as well as ones of embracing tension and solutionscapes, I hope to aid in the *waterschap's* aims of more representational governance, especially relating to a sustainable future.

1.3 Research methods, online and in-person, tensions, and ethical concerns

This research project was conducted based on a set of research concerns outlined by Rijnland water board, based on their need to understand stakeholder views on the land- and waterscape. They are doing away with the 'form follows function'[5] method of water management, and hope to be more proactive with sustainability initiatives. The previous section builds to an explanation of motivation on a theoretical basis—especially how the climate crisis is urgent yet often understood from narrow cosmologies, depending on the perspective of the subject. My thesis provides insight into some of these visions, as well as giving some direction on how the water board can become more inclusive and sustainable. Ultimately, I emphasise the need for plural solutions, which accepts stakeholder conflict but places the long-term health of the region at the forefront. Through my theoretical framework, I hope to show that this is a vast and urgent topic, where solutions are a difficult balance to strike. In the next few paragraphs, I will outline how I achieved my results, and the research questions that I began with.

1.3.1 Methodology

My research process was long and had many stumblings—slowed down by the coronavirus pandemic, health issues and life overhauls. Interviews took place from January to October 2021, both online and in person. At the beginning of the research process, I was in contact with representatives from Rijnland water board, which helped me to formulate questions to ask my

[5] Wherein water level is dictated by the function of present land use.

interlocutors, and as my research developed, those questions began to change (especially as I realised that issues of water were often forgotten in debates around land use).

When I began the research process, I was stuck in the UK because of coronavirus-related border closures, so had to rely on online methods and interviews to gain an insight on the area. Online methods included tracing social media networks of both farmers working in sustainability, and more traditional farmers. By searching keywords and looking at the profiles of either journalists or farmers who also write, I was able to track opinions through social media ecosystems. I could see the same conversations happening across different timespans, often in reaction to similar articles[6]. By searching keywords, it became obvious who had a large platform, and I read through replies and looked at profiles of those who engaged with them. Alongside this, I engaged with both historical and contemporary literature on agriculture both in Europe more widely, and in the Groene Hart specifically. I cross-referenced these sentiments with ones expressed on social media, gaining a more full understanding of the social climate of the Groene Hart. All interviews that took place at this time were on Microsoft Teams.

When I was able to come back to the Netherlands, I carried these perspectives with me, and they informed how I considered the landscape I encountered. When it was still difficult to meet with people face to face, I walked through fields alone, making out features too small to see from a moving car or train. This allowed me to "see the landscape for [my]self" (Tsing et al, 2019: s188), something that Tsing et al describe as important in environmental research, allowing the researcher to step outside of viewing the natural world solely through the cosmology of interlocutors.

By interviewing people associated with the waterboard and others working outside of it, I gained an understanding of both the structure of the institution and how it is perceived by the wider population, who are also voters in the democratic wing of the organisation. My initial focus was on people working in sustainability, traditional farmers and people involved with housing development, but as research continued I realised that housing was a more difficult access point. What's more, the issues of land and water use in the Groene Hart are incredibly complex, and three different groups was too much for one master's thesis! Also, as my research

[6] Such as ones detailing the nitrogen crisis, see section 3.4, or voicing concern over biodiversity, see section 3.2.3.

progressed, it was clear that I needed to emphasise water to my interlocutors, because often it fades into the background of peoples' ideas about the area.

All of my interviews were either online or on site, which allowed me to experience the landscape alongside the people I was talking to, further deepening my understanding of the area. Interviews were mostly in English, and I had more than one interview with most people that I spoke to. They lasted from 45 minutes to three hours, and were loosely structured, veering from family history into financial issues and the pressures of climate change, further emphasising to me how important the themes of my research were to those that I interviewed. I interviewed 20 people, in a sat-down, recorded capacity, and had casual chats with many more people who shaped my knowledge of the area. Some of my interviewees were referred to me through contacts within the water board, or at Leiden University. Others were found through sustainability networks. Access to potential informants was increased because I was affiliated to a major Dutch university, and could mention the water board when I thought it would help, though more of an established link (an organisation email address, for example) could have aided that.

1.3.2 Positionality

My position as an outsider meant that people would go to great lengths to explain things to me that were longstanding debates in the background of Dutch political life. This meant that I could understand how they thought of the issue more deeply than if they'd said they agreed or disagreed with a particular accord. It also meant that people assumed I wasn't part of any political movements, so perhaps felt that they could express their opinions more freely. Also, the fact that I hadn't spent much time in the Netherlands before moving here, and because I had not travelled around the Groene Hart much before my research project meant that I didn't take the landscape 'for granted'—to me, it was new to see such wide open, flat fields without many hedges or (obvious) features, which meant that what seemed ordinary for some interlocutors was exceptional to me.

Also, because of my background growing up in a rural agricultural community, I did have experience in the issues facing European farmers at present. This meant that I often 'knew the questions to ask', and means I have a lot of sympathy for the bind that farmers are in. This means I'm a little more generous towards the position of farmers compared to other left-leaning young people who are concerned about the environment.

1.3.3 Limitations.

I had many barriers to access in the research process, especially earlier on. Cold-emailing people had almost no responses, and when I did get referred to people through contacts using snowball sampling, I only received responses approximately 50% of the time. Even when people had been confirmed as interested in adding to the project, dropping out was common. For example, one woman with a sustainable initiative said that it was a good job that I'd been referred to by a friend, because she doesn't do interview requests by students normally. In the Groene Hart, there are lots of other research projects looking at similar tensions, and my project questions are very political. However, water taking a central role in the project was more unique, and meant that more people were willing to speak to me.

As well as the feeling that lots of people are looking at the same issues, there is a sentiment that nothing really gets done to solve the issues that make residents' lives difficult. For example, one informant proposed that I become involved in a research project on housing, then said that it wasn't approved because of fear of research fatigue of local residents. This is a real risk, although my focus on water from a social perspective makes my project relatively unique. I tightened my research area in light of this fear.

Of course, my inability to speak Dutch was a hindrance in the research process, though I did do one very basic group interview with the help of an informal translator and my rudimentary Dutch skills. It limited the people that I could talk with somewhat, although I believe that my 'outsider' status was more of a restriction here, as suspicion can be high, especially in such a time of such political divisiveness. If I were to do the project again, I would have embedded myself in a community project and worked from there, using that to gain access to the local community and to farmers. However, with corona restrictions and the constantly changing timescale of my project, this felt difficult.

Covid was also a constant limitation, and did slow down the project considerably, although I moved past this through my use of online methods, as described earlier.

1.3.4 Ethics

The agricultural community is small, and I did not want to harm anyone's personal or professional relationships in the process of conducting research. Therefore, some of the

'informants' in my thesis are composite characters, while others go by aliases or are totally anonymous. However, this was a balancing act, and I attempt to protect peoples' identities while creating an accessible and meaningful collection of data.
In both the AAA ethical guidelines (2012) and in the ABv (Dutch Anthropological Association) ethics (2018) guidelines, the emphasis on informed consent is clear, as well as the principle of avoiding harm, above all else. This was crucial in the research process where there are deeply felt cultural sensitivities. In the case of my research, I was sure to never discuss what one interlocutor had said to me with another (because there is deep political division), and obtained informed consent when it came to recording interviews. Because of my initial research online, I anticipated more stark differences between informants and their opinions, but in reality, peoples' opinions were far less extreme than depicted online. My research methods always adhered to coronavirus restrictions, hence why so much of it was conducted online or outdoors, with social distancing and/or masks. In terms of data protection, I kept interview recordings securely and once I'd transcribed them, I deleted the audio files.

1.4 Research questions

To begin with, my questions were concerning how the *waterschap* dealt with different (and often conflicting) landscape visions. These were shaped by preliminary conversations with other researchers, online research and wider reading.

- There are lots of stakeholders who are concerned with issues of the countryside—who is listened to? Who might be more overlooked? Who fits in with the 'imagination of the countryside', and how does history, imagination and nostalgia fit in with this?
- How does Rijnland water board deal with the short- and long-term problems of water (and landscape) management, and how do they consider these when looking into the future?
- How can the waterboard communicate sustainability needs to a diverse group as in the Groene Hart?
- Is the future of the countryside secure? Why or why not?
- What is most important to you when you consider the future of the area?

Later, I put more emphasis on the role of water and other shared resources in the area, explicitly asking about water management techniques, for example. Often the same topics as the ones above would be raised in conversation anyway, and as I asked participants to reflect on policy

and institutions more, I gained a deeper understanding of a conflict embedded at many levels of society.

As I have spent more time looking at my evidence away from the research period, reading around human-environment relationships, my understanding of my evidence has changed. Phrases which I once paid less attention to seemed more important, and I began to understand the tensions at the core of the Groene Hart to form an assemblage. After reading thinkers such as Fallon et al. (2021) (who emphasise the solutionscape), and Li (2007) (who writes about assemblage in forest management) my findings seemed to take the form of conclusions based in theory, rather than feeling like blurry hunches. Fitting with the *waterschap's* aims of understanding stakeholders and facilitating dialogue, the assemblage-solutionscape path allows for plural and partial understanding of water as a 'wicked problem' (Head 2021; Fallon et al 2021).

The Groene Hart, between Den Haag and Leiden, summer 2021.

2.0 The Groene Hart as a Planned Space

In my introduction, I outlined how literature can help us to understand how places come to be meaningful, and how the Groene Hart should be thought of as a waterscape. In the following chapter, I will provide historical and institutional context, showing how the Groene Hart is a carefully managed waterscape, using interviews and observation data throughout. These demonstrate that the Groene Hart is more of an idea than a fact. Then, I'll explore the idea that the Groene Hart planning concept is 'at risk'. After that, I consider some enduring debates in the Groene Hart—the relationship between the waterscape and farming, biodiversity, and the impact of rural industry on the area. I will finish with a reflection on a panorama artwork of the Groene Hart's land- and waterscape since 1945.

This section deals with how the Groene Hart is imagined, and has come to be thought of as a single space, even with many different realities that make it up. It exists as a legend, a legend which can be useful for multiple agencies and stakeholders using this image of a single Groene Hart to their own ends. This makes it difficult to implement sustainable governance, and adds to

the complexity of the conflict in the Groene Hart. In order to satisfy the *waterschap's* aim of more inclusive governance, we must understand how the waterscape has been made a single, particular, 'thing'—through spatial planning and interactions with agriculture.

2.1 A brief history of water management

Waterschap or *Hoogheemraadschap*, are Dutch institutions translated to water boards, water councils, or regional water authorities in English. Water is of paramount importance in the Netherlands; over 65% of the country is at risk of flooding, especially to the west, where Rijnland waterschap has authority (Kaijser, 2002). Toonen et al (2004) discuss how water boards are common pool resource management. They write that “water boards are a typical combination of functional and territorial decentralisation. They are a form of independent decentralised government, which within a given territory are responsible for a specific task” (p.10). In this case, the specific task follows the “clean water, dry feet” directive, relating to the quality and quantity of water (Rijnland water, n.d.). As Dietz et al (2003) describe, governing the commons is a difficult task due to their limited supply, so these institutions take a maintenance role, which is incompatible with a marketised model. Rijnland *waterschap* is a democratic government institution targeted by neoliberal austerity policy (Kaijser, 2002), many of which are expected to adhere to business principles, encouraged to have 'production' be as cheap and effective as possible, at almost any cost (social or otherwise) (Harvey, 2007). Water boards have been merged extensively since 1953 in the name of efficiency, and since then, numbers have gone from 2670 to 24 (Mostert, 2017).

As part of Rutte's austerity measures and in a general move to reduce the role of the state in line with the neoliberal agenda in the last 50 years (Pendlebury et al., 2020), centralised spatial planning was abandoned and contracted to individual councils. There were several experiments in collaboration in water management (Fliervoet and van den Born, 2017), but civil servants argued that a creation of a new administrative board for exchanging information was “not in the spirit of decentralisation” (p. 579). They describe how Dutch water management is only collaborative in times of crisis (ibid, 2017). Therefore, the waterschap is one of many voices on spatial planning, and cannot rule decisively on management of the waterscape.

Water boards are separate democratic systems to other local institutions (such as the *gemeentes,* or borough councils). Their elections have historically had a very low turnout, usually of about 20% (Mostert 2017). However, since 2012, elections have been on the same

day as provincial elections, and turnout has risen to an average of 43.7% (ibid.). Historically, the water boards have followed a democratic *trits* (triplet) of “Interest-Payment-Right of Say (*Belang, Betaling, Zeggenschap*)” (Toonen, Dijkstra and van der Meer, 2004: 14), and payment was historically labour maintenance of dykes and slotjes, but is now taxes in return for the right to vote.

Explaining the fixed seat electoral system, Timo, a policy officer for Rijnland *waterschap*, said:

> *The number of votes for… the traditional farmers is still big in our board. In the water board, there are 30 seats to decide in our board, but still there are nine seats excluded from the election… Four for agriculture, four for the enterprises, one for nature. That makes it nine of the 30 seats are not democratically filled by elections, but they are appointed beforehand. The 21 seats left there are conservative parties and Christian parties, who also have linkages with the enterprises and the agriculture, so their part in the board is increasing in two ways, the appointed seats, and the elected seats and that makes [them] over [represented].*

The water board ensures water safety (such as maintaining dykes to prevent flooding), water quantity for different uses, quality (for drinking and other purposes), and deals with wastewater. It also legislates on these issues, for example, opening a consultation process for water levels (for more on this, see 3.2.2). Since the Groene Hart is a waterscape, when the water board controls the water levels, they are also controlling the landscape. Toonen et al (2004) describe how an urban resident may only be aware of the working of the water board when annual taxes are due or when a dyke breaks, but for farmers, even subtle changes in water levels requires radically different farming. That is to say that the *waterschap's* task is mammoth, and vital in order for the Groene Hart to be habitable, making understanding the wishes of stakeholders vital for effective water governance.

2.2 The Groene Hart’s formation as a single space

In this section I describe how the Groene Hart exists physically in the middle of the Randstad, but also how it has been created, through a myth retold over decades. The way that it is considered, both by the public and in policy, rests on this creation myth. Through planning, the myth of the Groene Hart has become physical reality—a place considered remarkable for its openness even as it is populated becomes more open as environmental planning has made it so.

The Groene Hart is an area of 182,677 hectares (RIVM, 2001), stretching from Rotterdam to the South, to Amsterdam and Haarlem in the North, round to the suburbs of Utrecht and back down to Gouda. About 75% of the land is agricultural (as of 2001), and the population stands at approximately 700,000 (ibid.). The relatively open area of the Groene Hart is thought to have first been ‘noticed’ by the KLM director, Albert Plesman, around 1935. He described this open space while flying over the Randstad and emphasised that it should be preserved. This powerful myth of a single, almost miraculous discovery (of something already there), alongside Plesman’s ‘legendary’ status, has solidified into a powerful ‘fiction’ (van Eeten and Roe, 2000). At first, the idea of the Groene Hart was not popular, but in the 1950s, with memories of the Hunger Winter[7] strong, it made more sense. Malnutrition in urban centres was more extreme than in rural areas, so proximity to food production was appealing (van der Zee, 1998). Three principles underpinned the treatment of the Groene Hart: firstly, that historic city centres be preserved; secondly, ensuring agriculture remains at its heart; and thirdly, that the Randstad should grow outwards and alongside existing roads (with greenfield buffers between settlements) (Valk, 1991). Within this, agriculture and recreation would take priority over further settlement growth, ensuring the green space’s survival. Plesman's preservation campaign worked—the Groene Hart was designated a national landscape in 2004 (Korthals Altes, 2018). National landscapes are “areas with specific coherence between nature, surface, land use and occupation. They are not museums, but areas where people live, work, venture, and recreate” (Nationale Landschappen, quoted in Baas et al, 2011). Some of my informants described the area as a sort of 'central park', or as relief from the surrounding cities, which I will continue to reflect on throughout this chapter. Many people commute daily through the Groene Hart, and infrastructure has been put in place to minimise commuting's impact[8]. This has preserved the 'green' visual and environmental feeling of the area, hiding infrastructure which can disrupt the myth of the open countryside.

Away from the 'green', it is important to remember the 'blue', even though it is often forgotten in planning decisions. Water is essential in several ways—it is needed to grow crops, thus also feeding back to the 'green'. It moves below ground level in aquifers, flooded fields form bird habitats, and high water levels keep peat meadows alive, fighting subsidence. Conversely, there is the 'blue' of the threat of rising sea levels, of water levels too high to drive heavy agricultural

[7] For more on the Hunger Winter, see section 3.3.
[8] such as the Leiderdorp-Hazerswoude tunnel, the cost of which is much debated, but thought to stand at around €500 million (Structurae, 2021).

machinery, and the risk of flooding in more extreme weather conditions (hastened by climate change). The area is a waterscape, which policy should recognise. One informant emphasised the need to centre the 'blue' and to think of it as vital for the future, as the Randstad becomes a 'blue-green metropolis', with more sustainable, higher water levels, for example.

2.2.1 Is the planning concept at risk?

Korthals Altes (2018) argues that because of the fragmentation of planning discussed in the previous sections, the Groene Hart is an unprotected concept. This was not my finding however, and though there was debate in interviews as to *how* the Groene Hart would exist in the future, there was never debate as to *whether* it would. Since 2012, when formal planning laws gave way to provincial planning authority, there has been less formal protection for the area in place. In this move towards “deregulation”, developers take an increasing role in the creation of new housing (van Straalen et al, 2016). Untangling how different people conceptualise the area and threats to it is essential for inclusive sustainable governance.

In my interviews, the concern that the Groene Hart could cease to be an open space was not evident. Instead, other concerns took precedence. Below is a typical set of concerns, from Jacco, a councillor in Alphen aan den Rijn *gemeente*:

> *In the past there were more trees and more diverse flowers and much of those have come in the past 20-30 years and … for the Netherlands it’s quite a unique landscape…. [we have our] own unique species. The weidevogels (meadow birds), there’s a dilemma for me, I think it will be good to have more diversity and more trees… So there’s quite a dilemma I think. And also of course is this kind of agriculture sustainable? [I think people should eat less meat, but] what will this mean for the landscape of course, for economic development?... So I think these are a few of the main dilemmas… we [also] need a lot of housing. Well, how do we give space to housing while keeping the landscape and the biodiversity maybe… increase it… Energy is also very important, we need more wind, we need more solar, and of course this also uses space, it can also be a challenge for the landscape, for the experience of the landscape. It also has an economic factor as well for tourism and of course for recreation, and also for biodiversity.*

Central to this thinking is the fact that there are risks to the Groene Hart, but these risks are about the nature of the openness, not the openness itself. Those visions of a green, 'natural' area (Akkerhuis, 2020) are reflected in the above quotation, such as “keeping the landscape

and the biodiversity", and "I think it will be good to have more… trees". Another interlocutor, John, a biologist, discussed how he does not think that it is a good idea for there to be many visitors to a patch of land owned by organisation Land van Ons[9], saying that even when there were just ten people in a few fields, since there are no trees, it "looks very busy" (also discussed in section 4.4).

The Groene Hart was designed with ideals of openness and access to nature in mind, and through policy making in the ensuing decades, this was solidified. Now, even though there are firmer protections in place through the "national landscape" scheme, this is not an absolute guarantee of protection (Baas et al, 2011). Counter to the fears of Korthals Altes (2018), the concept of the Groene Hart remains strong, and my interlocutors thought it important for it to remain open, sparsely populated and agricultural.

2.3 The interplay between agriculture and the waterscape

In the previous section, I described how the Groene Hart has come to be known as a single space, and how this planning concept is one that seems robust, despite lack of formal protections. Now, I move onto reflections on how farming has created the waterscape as it exists today, and how, in turn, topography dictates the type of farming that is possible in the area.

2.3.1 Farming's impact on the waterscape

In the next few paragraphs, I turn to how interactions with the Groene Hart have created the waterscape that we see today, one that is not only inhabitable, but is also highly productive, able to be intensively farmed. Many of these changes came about in an effort to be able to farm the landscape, and this aim is still at the core of water management.

The impact of farming on the waterscape is undeniable–the way that the land has been drained, poldered and managed for the aim of agriculture has transformed uninhabitable peat bogs into the spongy, fertile meadows of today. The water levels of these peat bogs have been steadily reduced over the past few hundred years, resulting in land subsidence, something that will

[9] Land van Ons translates to 'our land', and is an organisation that buys patches of land from crowdfunded donations, and promises to care for them no matter the political climate, using experimental sustainable agriculture and rewilding methods (landvanons.nl, 2022).

continue to be problematic in years to come[10]. Land subsidence will continue for as long as the bogs are deprived of water, and as they dry out, harmful greenhouse gases will leak into the atmosphere. If they are properly managed, however, they can be a carbon store, rather than a carbon sink (Akkerhuis, 2020).

Before the formation of the water board and the draining of the peat bogs, huge, raised domes (as high as 4 to 10 metres) covered the coastal region. The population could only live on the most elevated areas of these (TeBrake, 2008), some of which were man made hills (de Jonge, 2009), wherein widespread agriculture was not possible. TeBrake (2008) describes how when peat was dried out, it began to oxidise, releasing vast amounts of carbon into the atmosphere, and making habitation and agriculture possible. Coordinated water management began as early as the 9th Century, with the Rijnland water board founded in 1255 through a charter by Count Willem II (TeBrake, 2008), leading a coalition of powerful residents (de Jonge, 2009). Around 550 years ago, watermills were installed to help pump out water, as the area was slumping below sea level (ibid.). TeBrake describes the standard memory of water management in Holland as “an heroic struggle against a powerful enemy, nature, but with a generally onward and upward trajectory of human progress against that enemy” (2008: 77). However, he calls instead for a history “that sees humans and their environments constantly negotiating with each other” (p. 78). In this view, we see how the waterscape has been created, with humans working to reduce water levels to ones that are manageable, and in response, with the water fighting back—extensive, technologically complex water management is required to keep the land dry, and then, when the land has subsided below sea level, to keep water flowing[11]. De Jonge describes “centrally organised protection against flooding” as something at the heart of Dutch governance (2009). This agriculturally-minded water management makes this waterscape habitable to agricultural residents, both human and livestock.

[10] For more, see section 3.2.

[11] As an illustration, here, in my early fieldwork I conducted an interview in the middle of a field, but before the interview began my interlocutor walked me over to a large metal box next to a canal. He asked what I thought it was, and when I looked at him blankly, pointed up at the beautiful old windmill that stood above us. It was a pumping station, which works to pump water from a lower canal to a higher one. The lower canal stood at field level, and we were a few metres above it. My interlocutor described how, most of the time, this machine does all of the work that the windmill once did. Every now and then, however, when water levels are especially high, the new water pump and the old windmill must work together, in a technological negotiation with the water to keep agricultural land usable.

2.3.2 The waterscape's impact on farming

While farming has shaped the land- and waterscape in the Groene Hart, the particularities of the landscape also has a knock-on effect to the way that farming is conducted. Topological and financial pressures[12] means that farming in the Groene Hart is very different to that which is considered traditional.

A lack of shade in the open fields in summer means that cows cannot be out in the heat for extended periods, so in summer they spend large stretches of time in the shade of barns. So, instead of cows grazing directly on the land, manure is spread on fields and cut five times per year to feed these indoor cows. This method allows for intensive farming, so bovine farmers may also buy or lease land from surrounding farms to grow the grass which is needed to feed his cows. These cows never or rarely actually set foot on this land, but are fed by its grass. The combination of the inhospitable topography of the area, alongside the need for intensification, means that animal agriculture has been considerably changed.

This is far removed from what comes to mind with ‘traditional’ farming, with cows munching on grass before going back to their stables for winter, where they eat hay throughout the colder months. Farmers often cannot afford to buy the land needed for their vast numbers of cows, so lease the land from other (ex)farmers who can't afford to keep cows at all. These ex-farmers[13] are also paid to have manure spread on their land. Kees, one such farmer, described the way that modern farming can look now.

> *Now farmers do start with manure and concentrate (fertiliser) in February, and they have to mow in April for the first time, and then in four weeks later, again, four weeks later again, then five weeks, then six weeks, and the last in October... but yeah, it's… like an industry, it's not like farming anymore.*

Raising the animals happens in a way that is separated from the landscape:

> *The grass isn't... it's not part of a whole, it's all segmented, it's grass, grass becomes feed, feed becomes cows, and the cows... [make the milk].*

This disjointed farming, with the grass being grown separately and brought to the cows in sheds, has advantages for some:

[12] Particularly towards intensification—for more on the financial situation of farmers, see section 3.6
[13] Although this can be a tricky term, with one informant telling me that she believes "a farmer never stops being a farmer".

We sell grass to our farmers, and we place the cow shit and everything [here]… we only grow the grass.

One employee of the farming union LTO described this income model:

There is a certain level, for one cow, you need that much acres to it so you can use your own manure [to fertilise the land], you don't have to bring your manure somewhere else, or use too much manure for your [land]... so there is a level in that.

And if you produce too much manure?

Then [they must] get [rid]... of their manure, and they [are] paying big money [to do this]... a significant part of their income can come from the manure.

For farmers who do not have livestock, such as *Akkerbouw*, or crop farmers, spreading manure can be "10 or 20% of their income". For some landowners, the business of muck spreading provides valuable income, a constant revenue source in the insecurity of agriculture.

This process is incredibly disconnected from the land, and far from a more traditional conception of farming, where the land sustains the cows, and the cow's manure fertilises it in turn. This state of disconnected farming causes farmers to lose connection to the land. The system is one that they interacted with on the basis of necessity rather than preference. One of the reliable incomes being muck-spreading means farmers feel disconnected from the meaningful work of farming and production. As Kees said, "it's like an industry, it's not really farming anymore". This point also illustrates how, in order to be profitable, farming must be more intensive than the land can sustain, with consequence to environment, and to the future that the farmer can envisage[14]. I describe this to show how even conflict and unease lies at the root of even what produces the landscape. Agriculture now is world's away from the traditional agriculture of the past, despite many farmers arguing in favour of agriculture's continuation because "it has always been this way", and is an ancient profession. This conflict is something I explore more deeply in the following section.

2.4 The value of a natural area and agencies encouraging it.

[14] For more on this, in section 3.6, on the financial situation of farmers.

Much of the social value of the Groene Hart lies in its interpretation as a natural area, in sharp relief to the urban areas surrounding it. However, whether this is true (or even a desirable aim) is debated. In my previous section, I described how the waterscape has come to exist through agriculture and how agriculture is shaped by the waterscape, alongside the documents that attempt to show a cohesive vision for the landscape. In the following section, I explain the link (and often tension) between biodiversity and agriculture, as well as how different agencies are involved in it. This debate about biodiversity calls into question some of the core tenets of the Groene Hart's social value, which is based on its 'naturalness', or its property as a "city park for the Randstad".

Van der Ploeg (2001) explains how, before 1980, the extensive management of farmland with 'wilder' fields at the rear of properties meant higher levels of biodiversity, compared with today. However, the increased intensification means that biodiversity has decreased (van der Ploeg, 2001). Some areas of biodiversity, such as that of meadow birds, are well supported in the Groene Hart. The nature of the landscape as a very open, flat area with little protection from predators, as well as the homogenous nature of single-grass species[15] means that meadow birds favour it, while pollinators such as bees are notably absent from the area (Tanis et al., 2020). Tanis et al. also noted that migratory insects were present in the Groene Hart and Midden-Delfland (an adjoining area), but more stationary species were absent (2020). This suggests that as a habitat, the area could sustain transitory wildlife, but not breeds that rely on it for all their needs.

The Groene Hart waterscape is embedded in numerous initiatives aiming to increase biodiversity and sustainability. One of these is the Natura 2000 scheme, a European Commission scheme which aims to protect key habitats (Natura 2000 europa.eu, n.d.). Others include Groene Hart Circulaire, an initiative which aims to promote the circular economy in the Groene Hart, and the National Ecological Network (NEN). NEN attempts to protect biodiversity through a variety of actors in the Netherlands through the 'red for green' initiative (RGA), which attempts to marry together ecological issues (green) with urban developments (red) (Simeonova et al, 2019). These authors link the need for an RGA approach to decentralised planning, emphasising the importance of collaboration even in a political context that can be hostile to this (ibid.), and despite budget cuts making it difficult.

[15] in the Groene Hart, mostly '*Engels raaigras*', (or 'Perennial Ryegrass' in English) is grown.

In areas of the Groene Hart that are in the Natura 2000 scheme, there are yet lower nitrogen targets than those set out by the government in the *Stikstof* directive (developed in section 3.4). This scheme is international because deposits of ammonia (and thus nitrogen levels) do not remain localised (Jacobsen et al., 2019). However, local nitrogen numbers are more evident in larger deposits such as "livestock facilities, manure storage and field application of manure" (2019: 897), especially wet manure. Animal agriculture has, therefore, been targeted for reduction to protect vulnerable habitats. The targets set out in this directive have been criticised by some as too extreme or misguided. Erisman, a Leiden University professor, is quoted in AD as saying “we need to have a conversation on what essential nature is” (2022). He describes how many areas of the Natura 2000 scheme are simply the best example of a habitat within the Netherlands, not Europe, and by focussing instead on Europe-wide goals, the pressure on Dutch farmers to hit biodiversity quotas could be alleviated (AD, 2022). Others describe how farmers have been able to ignore their role in the nitrogen crisis and eschew responsibility for climate change.

Increased biodiversity is not always seen as a good thing. One informant, a rural policy advisor, expressed frustration at the idea that sustainable reforms in the Groene Hart could end farming and turn the area into more of a nature reserve. Another informant told me how the Groene Hart "can't be all nature reserves... forestry is just not sustainable, [farmers] have to produce a living". Here, production output is seen as an essential output from the land, and the intensification of farming is seen as a natural response to economic conditions. With many people “trying to survive”, it is easier to be sympathetic to this. But it also denies the complexity of the area, and of the waterscape as a thing that should be centred. This is in conflict with the perspective of John, who said that farming has become so intensive over the last thirty years that it no longer looks like farming, and actually, by emphasising biodiversity, people are acting more in line with how farming used to look. The tension is encapsulated by a quote from Vicky, who describes the area as, at once "natural" and "history". This is different from the emphasis of biodiversity and natural areas being seen as something radically different from farming, as instead. and ended up being radically different, farms which emphasise biodiversity are often seen as a radical departure from the status quo, as opposed to simply going back to the way things were.

In this section, I covered how farming used to be more biodiverse before recent intensification, as well as various schemes that encourage biodiversity. The different actors that I've described

in this section have different aims and priorities, but are linked by the assemblage of the Groene Hart. This linking of otherwise disconnected stakeholders is a key characteristic of the assemblage (Li, 2007). Then, I discussed how biodiversity aims can be seen as problematic, because they focus on goals within nations, rather than Europe-wide targets, and do not fit in with established routes for income-generation. The question of biodiversity and how unsupportive of wildlife the Groene Hart is brings into question some aspects of the imagination of this area, as one of relief from the unnatural city, and of a natural, arable area. The next section questions this further—by looking at how rural industry in the Groene Hart differs from a romantic image of pastoral life.

Intensive horticultural farm near Boskoop, May 2021.

2.5 "Lungs of the city": reimagining rural industry

In interviews, one interlocutor described to me how the Groene Hart acts as "lungs" to the Randstad—a place where visitors can come to breathe and relax. This seems to be a normative view of the countryside, of rural idyll and a 'slower pace of life'[16]. In the story of the Groene Hart, it is often forgotten that a great deal of this area is not traditional farming. A large driver of profit is the intensive production of, for example, plants or vegetables in greenhouses. This looks nothing like the dairy farming for which the area is famous, nor the wildlife reserves that others say is its future. These boxy, highly regimented areas seem sterile, even, for example, as they are overflowing with little orange flowers. As I walked through an area with many of these plant nurseries on the outskirts of Alphen aan den Rijn, I was struck by how many of these small nurseries were clustered together, all merging into one a mass of picking and planting by workers in the sun, low plants, and bent backs. The featureless landscape makes the area seem smaller than it is, views of the countryside ending with a dyke or farm buildings.

Small stripes of different plants are flanked by thin shimmering waterways. Many of the nurseries sit on concrete ground, the fertile soil that attracted farmers to the area in the first place being unnecessary in such intensive cultivation. Long trailing systems of hoses and sprinklers provide ‘rain’ at more regular intervals than natural rainfall, especially in the fast-growing summer season. Some of the plants are under cover to be protected from the sun, and others are checked every few hours by attentive staff.

This is a forgotten area of economic activity, as described by one representative of LTO (the Dutch farmer's union), named Andreas:

> *I think the difficulty is [that] when I started, a lot of focus was on the cattle and on the meadows and especially in the economy, we really make a lot of money in horticulture, we really make a lot of money in trading, in transportation and logistics. And those are all all those things that also take place in the same Green Heart.*
>
> *So it's not like you're missing it, but maybe if you have some more attention, or maybe some more focus on it, it's another thing, and I think a lot of people are not really aware of it, but those are things that also happen in the Green Heart.*

[16] Of course, this view also omits how stressful traditional agriculture is (despite being seemingly romantic)!

Andreas is describing how the Groene Hart's industry is often forgotten by research, and this is also something that my study does not concentrate on as a primary focus of research. A lot of this area is covered by greenhouses and warehouses, and this is not something seen in representations in academic literature on the farming industry in crisis, nor reflected in public imagination, as I saw in my interviews. Industrial nurseries and greenhouses are not places primed for tourist activity, nor are they well suited to things such as care farms, so it is not possible to have a varied business model. There is not this same kind of nostalgia towards greenhouse growing, and it seems far from ideas of ‘nature’.

How the landscape looks is important—it is part of the story that people tell themselves about landscape, nature, and the area generally (Alkon, 2004), and whether they can imagine, and want, a sustainable future (Köpsel, Walsh and Leyshon, 2017). The flatness, uniformity, and greenery does invite a particular kind of visitor, and the area is relatively quiet with a lot of the traffic being pedestrians or cyclists. This is also a huge area of tourism and relies on the idea of the Groene Hart being a pleasant rural area. Although this is the case, it is also one of industry—of industrial estates, factories, and greenhouses.

I say this to argue that the Groene Hart is an imagined thing more than a fact—there are too many conflicting realities within it for it to be a single thing. The Groene Hart is not just dairy cows grazing on open fields, but is also intensive, concreted nurseries and acres of greenhouses. In the next section we turn back to the imagined waterscape of the Groene Hart. A huge artwork on a small family farm depicts how the area has changed since 1945, and possibilities for its future.

2.6 A panorama of farming in the Groene Hart since 1945

I am visiting the farm of Vicky, who inherited her father's farm after he fell ill with cancer and subsequently died. He had been a cattle farmer, and instead of carrying that on, Vicky transformed the farm into a cultural centre, with many income streams—having hosting events and exhibitions, alongside onsite tourist accommodation. The first big exhibition was the Panorama Platteland, a 70m long artwork created by 40 different amateur and professional artists. The panorama sits in a large barn, with windows looking out to the fields on one side, the farmyard on the other, as if this timeline of local agriculture sits between the two, part domestic, part pasture. This art chronicles the history of rural Zuid-Holland, especially the area near the farm (around Leidschendam and Stompwijk), beginning with 1945 (shown with Second World

War planes flying over the nearby Drie Molens[17]). We see a depiction of the Hunger Winter, and how people in this area tended to have small farms. Here, the representation of subsistence farming is of families sitting outside their cottages and working together on small patches of land. It seems quaint and stands in stark contrast to the huge metal sheds of farming in the 1990s era of the panorama.

Scenes of the rural idyll of fields, lakes, and birds are interspersed with more specific indications of the historical moment. For example, we see three separate depictions of Dutch statesman Sicco Mansholt[18], overseeing changes brought to the landscape—at first, observing the state of Dutch subsistence farming, then signing Dutch agricultural policy, and later overlooking the *boterberg*. These were huge excesses of stock as a result of EU Common Agricultural Policy (Grant, 1997). From the 1970s, farmers were guaranteed a set price for their products from the EU, so when consumer demand did not meet the amount being produced, there were huge surpluses, but the purchase guarantee still stood. Therefore the EU had to buy up products at the set price and would store them in various places to create *boterberg*, *wijnzee*, and *melkplaas*. Various initiatives were attempted to get rid of the surplus, such as selling products cheaply to Russia, and selling cold store butter to consumers at Christmas for a heavily reduced price, our guide explained. Finally, this issue was tackled with the implementation of a ‘milk quota’, wherein farmers could only produce a certain amount of milk depending on the size of their farm. To sell more milk, they had to buy up quotas from other farmers, on either an annual basis or permanently, if another farm went out of business. In 2015, an increase in the demand for dairy meant that the quota was again scrapped. Since then, farmers have been battling instead with incredibly low milk prices. In the *Panorama*, the look of regret on Mansholt's face in the painting symbolises his eventual relenting of his policy, but the Common Agricultural Policy remains key in the EU's agricultural system, which is often described as incredibly difficult to reform (Grant, 1997). The CAP is 33% of the EU's budget currently, dropping from a peak of over 70% in 1980 (European Parliament, 2022).

There are more insidious changes to the *Platteland* shown in the artwork—for example, we have a portrait of Rachel Carson alongside her book, Silent Spring. Shortly after we see images of the pesticide ‘Roundup’. We also see changes in the way that progress has affected farming families; we see farmers' wives go to work, which our guide described with a sigh "this never

[17] Three windmills that stand in a row, close together, near the farm.
[18] See section 3.3, on agricultural output, for more on Mansholt.

happened before, one income used to be enough". There is another snapshot of a farmer sitting in an office, "now they had to learn how to use a computer!", showing how farming was increasingly turning into a business, and as those business responsibilities fell on the farmer "they could no longer just go out into the fields to work". Farmer discontent is represented with the protests of 2019, of farmers in tractors blocking the motorway[19].

In the more recent areas of *Panorama Platteland*, we see depictions of more ecologically friendly farming methods alongside intensive farming, on the fringes of more intensive factory farming. Our guide described this as where Vicky “thinks farming is going now”, something that she described in interviews, too. Some of the schemes were organisations I conducted research with, such as the Herenboeren[20], who are depicted as a crowd in front of an old red barn, the crest painted on the eaves of the building. Another is permaculture farms and food forests, shown with a map at the top of the painting. This was particularly inspiring for Vicky who has built a food forest in the grounds of the farm. They use a final portion of the paintings to look to the future and what that could look like, especially in light of the Covid pandemic.

The theme of water also runs throughout, subtly. There are little grachts dividing areas of the painting, and an underwater scene showing a decline in biodiversity in the waterways. At various points in the panorama, *de drie molen* (three windmills), originally built for the draining of de Driemans Polder, stand tall. They're iconic in the area and close to the farm, and our guide says they emphasise the local area in the painting.

The *panorama* at Vicky’s farm shows how intertwined agricultural history is with that of the countryside. Throughout my thesis, I am focussing on agriculture because it is in a transition phase, as the *Panorama Platteland* shows. Though this is fraught, it is a site of opportunity. At the moment, agriculture consumes vast amounts of water, while wanting low groundwater levels for driving machinery. Farmers' issues are divisive and farmers' groups are powerful in politics and society, so while we do not have to humour all their views, it is worth taking them seriously. This may not necessarily create a more inclusive policy but will mean that there could be better

[19] Something we have seen in the years since, too.
[20] The Herenboeren initiative is a series of community-owned farms, wherein 200 families or "households" which is loosely defined) make investments of €2000 to buy or lease the land. I visited Herenboeren Aan den Drecht, in Leimuiden. This initiative allows people to 'buy in' to a farm as an established investment, and they then pay weekly for food grown on the farm. This food includes the vegetables grown on fields, eggs from on-site chickens, and will eventually include meat from animals fed on grass. The farm is going into its third year of harvests, and remains varied and small-scale, worlds away from traditional agriculture.

disagreements[21], where people feel motivated to speak up for the future of the waterscape. These disagreements have potential for peer-to-peer learning, and could then work towards a more inclusive water policy, as the *waterschap* desires. Furthermore, as van der Ploeg (2020a) describes, if we do not engage with farmer groups around the Netherlands, then rural areas will become strongholds for the far right, along with the distrust, misinformation, and dangerous rhetoric associated with this. Lessons learnt in (environmental) sustainability may lead to a more (economic and social) sustainability in farming, but to understand these differing perspectives, we need to take each vision of landscape and water seriously. I explore multiple avenues of conflict in the next chapter and describe how they combine and overlap to form an incredibly complex problem, one in which resolution should not necessarily be the aim.

3.0 Dispute

In the previous chapter, I considered how the Groene Hart is more of an idea than a real place, and how the myth of it is emphasised by people working within it. The variety of economic and cultural activities taking place within the area, alongside the high number of stakeholders means dispute is common. In this chapter, I move on to how these differences stoke a fiery debate within the Groene Hart, which many informants described as a "crisis point". Over the course of this chapter, I explore how conflicts overlap to form what some consider to be an 'impasse'.

In the Groene Hart, there is debate about what should happen in the future—where water levels should sit, whether there should be more restrictions on emissions of *stikstof*, for example. But there's also debate about what is there now—for example, in interviews, I noticed two separate reactions to a field of grass. One reaction is to call it a ‘green desert’, where others see it as a natural area, or properly managed, neat, successful farmland (see 3.2.3). In each case, the people expressing these thoughts believe that by following their view, we can do what is best for the area. We see this with farmers wishing to be compensated for 'landscape services', even as their behaviour is criticised by environmentalists. People on both sides can forget water in their aspirations for the future of the landscape, and to encourage them to be more sustainable, the water board should be aware of differing visions. When people assert what the future water level should be, they assert what the land should be and what it should be used for.

[21] Which Cuppen (2018) emphasises as being productive.

3.1 Crisis point

I am sitting in an expansive barn, a huge open space with pastel walls, a brand new kitchen, and mezzanine level. The retired farmer I am here to speak to today referred to it as a meeting room, and my expectations were far lower than the space before me. "Wow, this is like a wedding venue!" I gasp when I walk in. Kees replies with a humble "Yes, we've had some weddings here." Kees stopped farming in 2018, after 40 years, having inherited the farm from his father. His family have lived here for generations and he talks about the place with care.

At the end of our interview, I ask about the farmyard, where Kees lives with his wife, and he says, "Would you like a tour?" I excitedly say yes. Squat brick buildings around the edge of the farmyard have been converted into apartments and are let out furnished on both a short- and long-term basis to holiday makers and local residents. There is a small marina on a channel above these buildings, where he has rented out moorings for decades, but he says, "that is only in the summer", and therefore not a full-time income source. Chickens scratch around one unconverted metal barn, another houses a neighbour's cows. The fields are cut for grass, to feed other farmers' cows, with one flooded in the spring "for the meadow birds". He has a cycle path cutting through the land, permission for which he granted on the proviso that he could have a commercial licence for his barn. His hope is that one summer, he will have a café selling refreshments to passers-by to boost income from the barn conversion. Despite stopping himself, he believes that farming is integral to the Groene Hart, and describes farmers as people who do "landscape services".

I said, "Gosh, you must be busy!" He sighs, listing these, saying, "It can be hard to decide when to stop. I mean, I am 60," and he doesn't have a successor, so when he goes, the business ends. Deciding when to stop working is as difficult for him as the decision to stop farming.

Kees' story, of having to let go of farming because of no successor or economic hope, is echoed around the country. Farming is incredibly economically unstable, and even when farmers have retired, many continue having odd-jobs related to farming. What's more, they don't have people taking over the business. Only one third of farms headed by someone over 55 have a successor (though this figure is 66% for dairy farmers) (Netherlands Statistics, 2012). Lots of others will be like Kees—no longer technically a dairy farmer but still involved in the local network of agricultural boards, still having the patchwork of income like many other farmers today. Moreover, the financial system of inheritance means that young people taking over a farm must

purchase it from their elders—gifting the farm is not simple. As a result of the capital required for this, just 30% of young farmers have a large farm (van der Veen et al, 2002), and in the Netherlands, less than 4% of farmers are under 35 (European Commission, 2019). According to van der Veen et al (2002), the price of land is a key barrier to succession.

The price of land is extremely high, so smaller farmers have no scope to expand. Many farmers live on poverty level wages but sit on land worth a few million euros. This means that they cannot afford to buy land on neighbouring farms, which would enable them to have a more ‘efficient’ business model. Historical inheritance patterns of dividing farms between all children means that farms are small. Lack of cash flow compounded by pressure to sell land to housing developers means that there is a fear of the *platteland* (countryside) ceasing to exist in its current form, thereby scaring residents, environmentalists, and farmers alike.

The Dutch farming crisis is also felt in the populist panic from which the political party BBB (BoerBurgerBeweging or Farmer-Citizen Movement) arose, which in one poll had as many seats as the CDA (Christen-Democratisch Appèl or Christian Democratic Appeal), the party traditionally aligned with agricultural politics (Peilingwijzer, 2021). This projection did not materialise in local elections, but the BBB did make gains, predictably in rural areas (BBB, 2022) and in the 2021 Tweede Kamer elections, it won one seat (Verkiezingsuitslagen.nl, 2021).

This crisis is one of economics, of the impossibility of farming in an increasingly international liberal economy, where the consumer price of goods does not reflect the prices paid to farmers, where global trade means that fewer people eat seasonally. It is also one of tradition, culture, and what it means to feel your way of life threatened. Amid the numbers and concrete ‘facts' of the agricultural economy are the stories that people tell themselves and each other, and it is these human, subjective narratives that often have the most impact. Holloway et al. (2021) describe how the sense of belonging plays into questions of succession in family farms in Northern Ireland. They describe how most farms there are family farms, similar to the Groene Hart; bonds that family members have with the land have been forged over multiple generations, an emotional tie that makes decision making processes yet more challenging (Holloway et al., 2021). Farmers in the Groene Hart are dealing both with challenging financial circumstances and emotional ones.

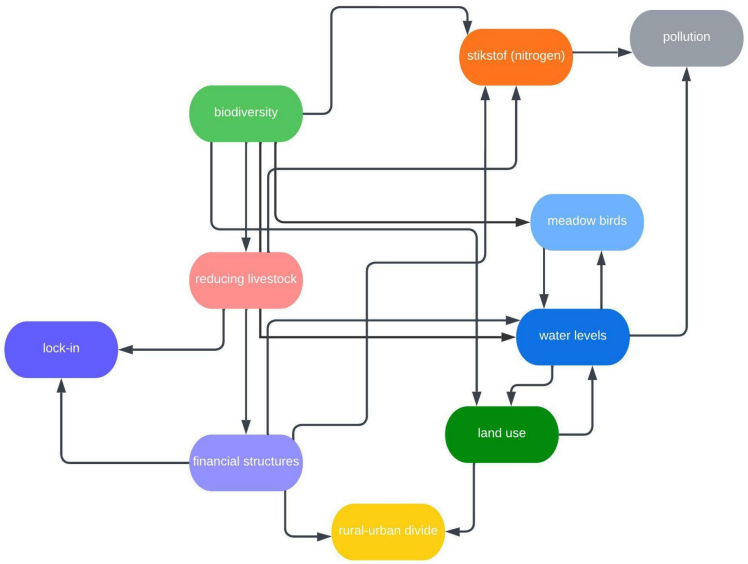
Changing environmental regulations are daunting and enraging, but for many environmentally minded people are not close to being enough to put a stop to the environmental degradation that agriculture has already caused to the land- and waterscape, and continues to emit into the atmosphere, soils, and waterways. Housing is necessary in a country with an acute housing crisis but is also an emitter of harmful greenhouse gases and nitrogen.

The crisis of the countryside was explained by one employee of the farming union LTO:

> *There are a lot of challenges. We're [at a] turning point, and we [have been in] the last 10 years. I think there was a growing, increasing, way of different approaches, so one day you had a [civil] servant who came [to] talk about biodiversity, the next day somebody can talk about water quality, next day somebody wants something about climate change! And the farmer is a farmer and… not a scientific master… it became increasingly difficult for him to fit [all of these] in one business case on his farm.*
>
> *So that's our challenge right now to integrate all those challenges in advice and in advising the farmer.*

Many have been working to find a way through these multi-layered challenges for several years and still are. My goal in this chapter is to highlight and describe some of these challenges and highlight the work of multiple committees and individuals from across political and social spectrums as they also navigate them. In the next section, I will consider how these issues overlap, and therefore how it is difficult to consider one aspect of this crisis point without considering another.

3.1.1 The linkages between the main conflicts



The Groene Hart is one space, albeit porous and non-coherent, propped up by myths. Within it, there are many micro-biomes, all natural life is necessarily connected, as Frans (a biologist-conservationist with Land van Ons) described to me. Changes to the landscape and environment in one capacity will necessarily change it in others, but some of the alterations are more directly connected than others. The points at which these issues and the areas where they differ are explained below.

Increasing biodiversity is an aim in itself, as supporting a wider biome in the Groene Hart is deemed essential when moving towards a more sustainable future. Supporting this widening of the flora and fauna found in the Groene Hart is something that many organisations within it see as important. We should be careful, however, around language used about things becoming more ‘natural’ or ‘how it was’— even though the polders that make up the Groene Hart are hundreds of years old, the waterscape is in no way natural and is almost entirely man made.

Part of the concern for biodiversity is encapsulated in the issue of meadow birds, which have become a key (almost totemic) part of policy for the Groene Hart, with paths closed during mating season and dedicated areas for breeding; this has added to the concern with biodiversity is that of *stikstof* (nitrogen) levels, which is an issue in itself (because of the pollution to land, air and water that goes with high nitrogen levels) as well as an issue for biodiversity. A meta-study by Midolo et al. (2019) shows that high levels of added nitrogen in the soil cause lower levels of species richness and abundance of plants across many different areas and soil types.

For there to be a reduction in nitrogen levels, livestock numbers must be reduced. This is tied to the financial situation of farmers, since frequently, loans are given on condition of intensification (van der Ploeg, 2020a), and very little support is available for extensification, which could help reduce nitrogen levels, increase biodiversity, and allow for a rise in water levels.

Financial structures also create tensions between groups, as one group cannot imagine other possibilities and frustrations mount around sustainability concerns. The issue of unaffordable housing also emerges here, but is examined in section 3.5 on land use planning. Housing construction also has consequences for water levels, just as water levels and land use underlie what can be done with a landscape; in the Groene Hart, this is largely the same thing. In Rijnland water board's water policy, form follows function, so the use of the land is determined and engineering works make sure this is possible. However, this policy is being questioned (as described in the introductory chapter).

In order to take these multiple conditions as non-conflicting and overlapping, an assemblage perspective is useful. Through Li's analysis of forestry management (2007), we can see how difficult the governance of shared resources can be, and how the assemblage can be a site of constantly shifting factors and stakeholders bringing insecurity to those who are concerned with it. She describes how there often is a desire for an assemblage to seem solid and unchanging, making the assemblage technological and non-political. But as we can see with this portrait of a diverse and interwoven conflict, the process of rendering technical and focussing on compromise can be ineffective and ultimately undesirable, as these tendencies can erode trust and opportunity for collaboration, which may be more of a productive avenue for change (Schreuder, 2001; Cuppen, 2018)[22].

These issues converge in the Groene Hart and are all linked to the waterscape. The land has been created through and continues to be shaped by the industrial processes that take place on (and with) it, with water levels underpinning all of this, defining how people can engage with the landscape—whether they can walk on it, farm with it and build on it, for example.

[22] For more on this, see section 4.1, on the Polder model.

The outskirts of Zoetermeer in the South West of the Groene Hart, June 2021. This area is crossed through with many cycle paths, often running alongside channels of water (as seen to the left of the image). The fields themselves are not accessible to the public, however.

3.1.2 An illustration of an 'impasse': the rural-urban divide

In many of the points of conflict in the Groene Hart, people cannot understand others' perspectives. This idea of there being divisions between urban and rural residents of the Netherlands makes debate more fraught. As the demographics of rural areas shifts, community cohesion between long standing rural and ex-urban residents is increasingly important for an inclusive approach to policy making.

Outside a bar in the Hague, a man asked what I was researching. I gave a brief overview of my topic as he nodded along. He asked where my research area was, and I said it was the Groene Hart. He threw up his hands saying, "The Groene Hart! It's like falling off the Earth, going there! It's like another country! The Groene Hart is not the Netherlands!" Laughing, I asked what he meant and he said, "I like it here in the Hague. People are nice, they're normal. In the Groene Hart, it's kind of backwards. It's not the same." I asked for an example and he couldn't think of one, but later, when I made a joke about the bar man taking away my beer before I was

finished, he said, "You see, this is what they would do in the Groene Hart!" "They throw away beer?" I asked, confused. "Yeah! Life is cheap there, and they would just throw away a beer. They're a different kind of people in the Groene Hart."

Of course, this difference is tongue-in-cheek, but despite this difference, lots of people are moving to the countryside, where houses are bigger and there are wide open spaces, more attractive since the pandemic. Explaining why it is that people move into the countryside, Josien, a rural policy advisor, said the following:

> *A lot more people have moved out of the cities now, saying we want to live in a quieter place quite near to the cities. I mean living here in Alphen (aan den Rijn) you can be in the Hague in half an hour, Amsterdam half an hour, Rotterdam half an hour… Utrecht half an hour, you know. Everything is half an hour away, and still you live in quite a rural area, but then people who move from the city into a rural area don't always appreciate (she smiles), you know rural living has its own limitations. It might smell … farmers applying manure, you might have tractors going 30 mph on a 50 mph road, those kinds of things, that's the thing that you have to keep in the back of your mind when you buy a rural property... And there's also things like, you know the elderly, are they connected enough to things like a GP, to their local community, are people helping them, can they get into town if they need their shopping? All these things that… give a whole different dimension to living in a rural area.*

Josien described these things as adjustments that people have to make to live in a rural area, as life can be very different to life in a well-resourced city. Kelly and Lobao (2019) describe how ex-urban residents can be so distinct from the rural population that it can be helpful to view them as separate when looking at the rural-urban divide. Kees echoed this sentiment:

> *The initiative about changing things is often brought from people who are (laughs) … outsiders! [They come with ideas]... others don't see it as a local idea, but well, when the story is good… [it works]. Merijn (a researcher working in sustainability) can tell the story. He is also from a little village, and he can easily relate to the local people… not everyone can.*

Some in the Groene Hart are interested in changing these perceptions of division. Describing how she would use the space on her farm, Vicky described how she would use it to encourage bridging the urban-rural divide.

Vicky: We will make… a Jeu de Boules area… to bring older people from this area for outside activity and meet each other, and so I will do it in a very… creative way. I introduce new things so people can experience what is, what we can do with nature and what we can do outside with each other… So that's my way of working.

I really believe in the goal, that the cohesie (cohesion) in the country field areas is going down very fast. And we have to, in the Groene Hart, to work on tourism or day recreation and hospitality for companies in cities. But we have to bring the farmers and the burgers (citizens), who have come in the areas to each other, and so we need more social concepts in the green heart, and not only in the Alphen city and in the Zoetermeer city, but no, in the Greens in the green area.

Annie: Yeah, make the city people come to you. [laugh]

Vicky: Yeah and but [also] to bring the people who live on the country fields together. because the cohesion is terrible. But 50 or 70 years ago the farmers were dominant in the countryside, and everybody came to the farmers to get milk fresh from the cows, and to help us harvest from food. But that part, it's not here anymore. So I will start that again so we make a meeting area, a public area here. For inspiration, but even for meetings and for cohesie. And [to have] a business.

While community cohesion is clearly important to Vicky, others feel that differences between rural and urban populations are too wide to be broached. The gap in knowledge is highlighted by Kees, who disparages "new people" —better ideas come from people who "are from here" but left. If people become too entrenched, they cannot change, but it can be hard to convert people to new ideas even if they do have that local knowledge. One example that he gave me is Jost, who lived in Amsterdam for 15 years before coming back and taking over the family farm. He has a diversified income, letting out buildings and hosting tourists as well as farming, as he told me over the phone in our hurried chat. Kees said that he could communicate his (fairly radical) ideas to the local population, which, along with his being the son of the existing farmer, made it possible for him to be accepted into the agricultural community.

Even if total understanding is difficult to reach, it is important that there is empathy between these so-called "divides". Van der Ploeg (2020a) describes the threat of political alienation, writing that without intervention, rural areas (with their disaffected farmers and allied residents)

will become far-right strongholds. When political and social divides widen, populist parties will take hold and become increasingly powerful. Mistrust and disillusionment with mainstream political parties can lead to so-called "bread and butter politics", or that which pays more "attention to local realities and their logic of mutual support and care" (Koch, 2016: 291). Movements such as the one described by Koch (in the context of British council estates) can quickly build up momentum, but are then unable to create lasting change, or as is relevant in the case of the Groene Hart, lasting policy in the face of other difficulties such as the climate crisis. Taking Koch's analysis of the chasm that many mainstream parties have left behind and van der Ploeg's ideas on the rise of the far right in rural areas, there is a potential for major political instability if divisions and alienation cannot be overcome. In the images below, we can see how this has begun to take hold, with conspiracy theorists a frequent sight at farmer's protests.

Two images from farmer protest, May 2023. Many protests have evolved from being about single issues such as Stikstof, to involving wider conspiracy theories and, in the case of the right photo, a nazi (holding a "Prince's flag", used during Nazi occupation of the Netherlands and co-opted by the far right, with a backpack containing SS insignia). Castanho Silva et al (2017) draw the link between populism and belief in conspiracy theories.

The urban-rural divide means that as ideas begin to be associated with one particular group, discussion can shut down, ending opportunities for collaboration. Kelly and Labao (2019) discuss this in relation to the USA, mapping voting records of rural voters. They describe how polarisation between rural and urban populations can be a stereotype perpetuated by researchers and policymakers. In the Dutch context, Broekema, Fenger and van der Waal (2021) explain how municipal voting is not dependent on so-called "situational" contexts (such as income and class), as many assume. This suggests the divide between rural and urban

communities is not as large as some perceive it to be and is more based on the impression of an impasse than something that is impossible to move around. However, with this divide comes an erosion of solidarity, which is vital for the proper protection of the commons, such as with water. This is because collective action (especially for water) requires cooperation between stakeholders (Anand, 2007). If those stakeholders are too tied to identities that are at odds, then the possibility of collective action breaks down and sustainable resolutions are less likely (ibid.). Therefore, to create policy that bridges this, efforts must be made to reinforce that the 'impasse' of rural-urban divides is not an impasse at all and can just appear that way due to unclear messaging.

3.2 Water Levels

In the Groene Hart, water levels in polders sit at an agreed level, which used to be set every ten years, with the option to campaign for a change after five. Now, the process of deciding levels is on an issue-by-issue basis; if the established water level is no longer fit for purpose, then a consultation period opens. This consultation process is something I will describe in this section, which frequently slides into debates about technical solutions vs structural (political and economic) adjustments, a core debate on the sustainability of the waterscape of the Groene Hart.

The water level debate was described to me by Matthijs, who works in the consultation process at Rijnland water board. The process begins with the gathering of information from both technical readings and stakeholders. An example of the technical information needed is data on soil types. Some soils hold on to water differently to others, so the soil must be assessed over the entire polder, ensuring recommendations fulfil what this area specifically can take. The smaller the soil particle size, the more water it can retain, so the third of the rural land managed that is peat (with its small particles), needs different recommendations to sand (with bigger particles). Other physical data include rainfall density and frequency, base water levels, and which plants and crops are grown on the land. These physical data are combined with social data, gathered from interviews and consultations, about stakeholder’s preferences for land use, with recommendations made for what the water level should be set to. In the case of the 'soft' data, there can be disagreements and these then impact how the next stage looks. If there is little conflict, Matthijs told me, negotiations take place via email. However, if there are varied

perspectives and "emotions are high", there is "poldering", i.e. in-person negotiations attempting to satisfy as many stakeholders as possible.

After information is gathered and recommendations are made, a consultation period opens, wherein stakeholders come forward with any disagreement. After this first period is complete, temporary recommendations are made. Then,

> *People can look into it. And then after the six weeks they can write a letter or a note saying yeah, I disagree or I agree, most of the time, they only write notes when they disagree. And then we have to come up with good answers to those objections.*

At this stage, if the advisory board thinks that the complaints raised are not legitimate, they can decide to proceed with the original recommendations. Conversely, they may decide to change their decision. Often, there are multiple occupants of the polder, who use the land in different ways and thus hold different priorities about what the land should be used for. This means that there is even more room for frustration, and more negotiations need to take place. After the initial consultation period, there is a meeting with the *Hoogheemraad*, the elected body of the water board, where a vote is taken. The *Hoogheemraad* only meets every three months, and thus lengthens the process. After this meeting, negotiated results and a final water level proposal are made public, and again people can voice their opinions. After this, the decision is made final. In total, the process can take two years.

Matthijs said, “Most of the time [the water board takes] pretty conservative decisions." This is intensified by the reserved seat system, which votes in favour of farmer and industry interests (explained in section 2.1). In the Groene Hart, there is a constant threat of lowering water levels. It causes land to subside, limits biodiversity and increases the likelihood of a breach of saline aquifers, which would mean agriculture in its current state would end, with fields for the most part infertile and brackish, as Timo describes below:

> *The water level has declined a lot of times in a way that there are now nearly some polders that are on the level of the saline groundwater, and the farmers will not like that as well because if the saline groundwater will appear then the crops cannot grow anymore.*

Matthijs said that *waterschap* policy to counter subsidence does not go far enough, which increases the likelihood of saline breaches. Land is already between 3 and 5 metres below sea

level, and saline water lies at about 12 metres below sea level, while water levels (and therefore land levels) are reducing by 1 cm a year. The threat does not come from the land level alone; when annual dredging of the *sloten* and *slootjes* along the side of fields happens, poor use of machines can tear through soil and release saline water held in aquifers below. To Matthijs the risk is urgent, but many farmers disagree with him, preferring to engineer around the issue instead of changing practices.

According to some, a change in farming practices is a simple matter. By raising water levels in a polder near Leiden, owned by Land van Ons, conservationists argue that they can still farm, just differently. They argue that certain cattle breeds can withstand a higher water level due to their wider hooves, for example, and that machinery use can be reduced at times of higher water levels. Managed by the team at Land van Ons, a more diverse biosphere would establish itself, and the habitats of many birds that used to be a feature of the agrarian landscape could return. Both Matthijs and Bill, a Land van Ons conservationist, expressed similar ideas about how modern farming is much more intensive than past farming practices, arguing that farmers used to "work with the land" whereas now they "want to control it".

Matthijs summed this up saying,

> *I think in the whole world, we have more of a mentality where you think 'oh, we can make everything'. So by just making some technical adjustments, we can still maintain our farm on the same spot. But on the other hand, the climate is changing, and the land is subsiding... In the transition, sometimes we have to [take] a step. I think the mentality is still that we want to preserve what we have with most farmers, but also most people [living] in the area too.*

One reason for this, as Matthijs said, is that farmers want to continue farming in the way their parents did before them because they have inherited their farm,

> *They've been there for ages and they want to stay... while making a living out of it.*

Farmers that I spoke to describe feeling little sense of urgency to change water levels and to move to more sustainable water management. Speaking to Matthijs, learning how far off the saline water levels the groundwater was, I began to sympathise with the ‘no-rush' sentiment of (many) farmers to raise these. Considering this, I asked,

> *If you did nothing, there was no dredging, no artificial maintenance of water levels. How quickly would the land change?*

Matthijs: That's funny, because actually, last month I thought 'why shouldn't we switch off the pumps?' People will [then] experience themselves how wet it will be in a couple of weeks probably. And then we'll get a sense of urgency to tackle climate change! I think if we stopped pumping, then [the effects] would depend on when you do it. If you do it in summer, nobody will notice. Around now (we were talking in October, and the weather was quite wet, as is typical), then I would say that in around a week, maybe two weeks, the small channels will be full of water, maybe already overflowing. And then the land would be wetter.

Annie: Wow. So you couldn't be driving a tractor in five weeks' time?

Matthijs: Yeah. It would be a cool experience! A good experiment.

We both laugh and agree that this is one way for the water board to get recognition for their work in managing the landscape. Nevertheless, Matthijs explains that the danger is not just about hitting the saline water itself, although haphazard dredging in other areas has caused this, but an even bigger issue is where water will flow, and if it can flow out to sea, if land continues to subside.

Decisions on the water level also involve decisions on land use, with major implications for the future. Consequences last beyond the next ten years, in what kind of machinery can be used and what kind of wildlife survives. It determines how the land will look in one hundred years, and what sort of industrial and human activity will be possible then. This procedure brings people into the process of making the landscape and ties them to the idea of being able to engineer their way through environmental problems, rather than making lifestyle changes. The negotiation is political: the decision made is not always the most sustainable one, but reflects conservative *waterschap* opinions. The intensely scrutinised control of water levels by experts demonstrates how high the stakes are for all involved. It reflects people's livelihoods on the one hand, and on the other, sustainability and biodiversity—both acutely emotional issues.

This process is interactive, and invites many stakeholder perspectives. But the established route of policy, as Matthijs explains, creates conservative water levels, without little emphasis put on sustainability. This compounds the importance of viewing the Groene Hart as a waterscape in the context of *waterschap* governance. The *waterschap* is in prime position to tackle this—as a single agency, it is primed to negotiate on behalf of the waterscape. If we are to talk of the future of the Groene Hart as one where water continues to flow through the land and out to sea, it is vital that water is at the forefront of questions of liveability. Otherwise, an attitude of "oh we can make everything", as Matthijs describes, means that the land will subside, saline water levels will be breached, and water will no longer flow out to sea, so the land will be uninhabitable for every stakeholder.

3.2.1 Engineering out of a crisis

As I described in the previous section, engineering is often thought of as the solution for working with the Groene Hart's waterscape, rather than more radical and sustainable solutions. This is emphasised by the reserved seat voting[23] system and the power of the agricultural lobby. While Rijnland's engineering capacity is high, they cannot hold climate change at bay forever, and these 'business as usual' eco-modernist tactics have a limit under a rapidly changing climate.

One informant described how

> *There are still a lot of people who think that engineering is the answer for everything… but, again, you cannot prove that it's not the answer for everything. [But] problems have increased in a way that [isn't] manageable anymore. We Dutch like to say that … God created Earth, but men created the Netherlands, so to speak.*
>
> *And we have to change this mindset of … fighting the water. But the water boards were originally established because the agricultural land, the countryside, should be dry enough to farm, and to live on... there were all kinds of ways to get rid of the water… and now, things have changed… We should preserve the water in a way that we can use it in times of drought and things like that.[24] And that's quite another mindset and we have to*

[23] See section 2.1 for more.

[24] There is a fear that the Netherlands is running out of fresh water, especially because of the prolonged periods of drought, for example. Because engineering systems are geared around the nation expelling water as quickly as possible, the Netherlands stands at risk of running out of fresh water in dry periods (de Wit et al, 2022).

deal with that, but the farmers, they have their own problems themselves. They also have to make adjustments in how to make a living and it's difficult.

This idea of so-called ‘eco-modernism’ and the reliance on technology to fix environmental problems of the past and future is critiqued by Maarten Hajer (1995) who says that an overreliance on future technologies will cause the Netherlands to fail its climate goals, since more radical systemic change is essential. Li (2007) also argues that in an assemblage, the social and political questions of governance are reconfigured as technical ones. Van der Ploeg (2020a) argues that radical solutions are needed for how Dutch agriculture is structured and supported[25]. There is resistance by traditional farmers to radical change (Washington Post, 2022) and accusations of "agri-bashing" (van der Ploeg, 2020a) are rife.

This view of endless engineering to satisfy the whims of developers and farmers is changing though. As Timo described to me,

Some years ago for housing developments... the provincial government decided to make a new [residential] area on the lowest level on our country, minus 8 or 9 metres below sea [level], and we the water board said "well okay if that's your decision, we will make sure that people who are living there and working there will have drinking water as we are used to..., and we will make sure that the sanitation [works]", instead of saying "you're out of your minds to make a [residential] area on such a difficult and low lying area in the country", we accepted it and we made it work.

So the people who decided to make it a [residential] area, they get no signals of a wrong decision, because we made it work, so what's the problem? And now there are people living there, and they have sanitation and drinking water, they are safe from flooding, so they don't see the problem, and the risk is… repeating [this behaviour]. Nowadays, we speak with the provincial government at a far earlier stage, to make solutions together, and if in one of the discussions the province says we are thinking of making a [residential] area on that ground, on that place, now we can say as drinking water company and as a water board that is not wise to do, because there are a lot of water management problems and we can avoid these problems [if] we look for a better place, preferably higher level. And we are dealing with this in the discussion in the beginning, instead of solving the problems they have caused by using this specific area.

[25] Limits of technology are also clear in the nitrogen debate, in section 3.4.

We can see here that water is gradually being seen as something that people must be acutely aware of when making plans, that there is an emphasis on being aware of the waterscape when deciding on infrastructural projects. This could be seen as the beginning of moving away from the technical, ecomodernist approach, but whether it represents true sustainability remains to be seen. In the next section, I move on to discussing the aims of biodiversity, which some view as a central component of sustainability. This is linked to this issue of water levels—if water levels are restored to a higher level, then intensive farming cannot continue, and biodiversity projects may be more successful. What's more, infrastructural projects like the one that Timo described will carry huge implications for the biodiversity of wetland: if land is drained for housing, the previous flora and fauna that inhabited it can no longer exist.

3.2.2 Biodiversity: what is natural for the area?

Ironic meme from comedy instagram account @dutch_affirmations, made in the wake of summer 2022 farmer's protests (dutch_affirmations, 2022). Their "affirmations" are often culturally-specific impossibilities or delusions, in the style of new-age manifestation posts.

Biodiversity is another essential avenue of sustainability, which was frequently mentioned in interviews, but has debatable meaning. People mentioned ‘encouraging’ biodiversity (implying that there is an existing level of biodiversity but this must be supported); others described ‘maintaining’ it, showing that they believe the area currently to be in a state of biodiversity. On the other hand, some said that biodiversity does not really exist in the way people think it does; people look out onto the land and see green and think it is a natural area, whereas it is really a ‘green desert’ or too 'neat' to be natural. This is encapsulated in the above meme, which implies

that thinking the Netherlands is a flourishing natural environment is a delusion. It is also captured by the defeated remark from Josien, a rural policy advisor,

"Hardly anything in the Netherlands is natural anymore".

In this section, I explore the debate about 'naturalness' in the Groene Hart, the possibility of flooding the area, and Land van Ons, a previously mentioned project which aims to increase biodiversity while farming. I end with the disparities in what 'caring for the landscape' means for the people within the Groene Hart. Throughout this section, there are many references to 'meadow birds' (or *weidevogels* in Dutch). Meadow birds have become a sort of totem of biodiversity in the Groene Hart, with lots of resources put towards the cause, often at the expense of other aspects of biodiversity (Tanis et al., 2020).

The conversation around what is 'natural' in the Groene Hart is often deeply impractical because the landscape is so far from its natural state. Over the past 800 years of water management, the area has gone from unworkable peat bogs to fertile farmland, so flooding the land would not restore it to its previous condition[26]. A drastic rise in water levels may be more 'natural', but this is incompatible with life as it is now, despite keeping the land drained also having deep consequences. Under different management techniques, soil has the potential to store carbon rather than emit it[27]. Farming makes the structure of soil collapse, hindering its ability to store carbon (Monbiot, 2022). The Groene Hart is largely peat meadows, which must stay wet to stay alive (Akkerhuis, 2020). Peat has made the area ideal for farming as it is incredibly fertile, although huge amounts of it have been cut out for use as fuel over the centuries. Both drying out and burning peat causes it to emit carbon dioxide. This transforms peat from being an effective store to a source of carbon, from alleviating climate change to adding to it.

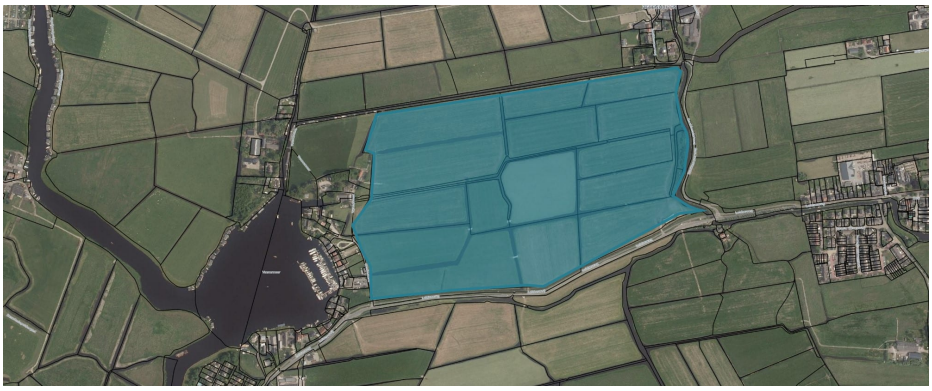
Though different groups of people have concerns about biodiversity, and wish to support it, they disagree on tactics. Often, financial circumstances[28] means that flooding fields is unworkable, so instead landowners flood a small number of fields to create bird habitats and temporarily prevent subsidence. Derk does this, and describes the importance of "a good population of meadow birds". He allows the fields to flood for a few weeks of the year, around meadow bird nesting season, and "when the birds are migrating again, [he] drains the pool so it dries up". It means that the birds have habitats to breed and feed, and brings birdwatchers to his land.

[26] As I described in section 2.3.1.
[27] Soil is the second largest store of carbon, after the sea (European Commission, 2011).
[28] See 3.6.1

Though he appreciates "working with nature more", his work can be seen as "not enough", despite being a radically different way of managing the land that he has cared for over decades.

On a relatively small patch of land a few miles away from Derk's fields lies the land owned by Land van Ons. After the land is bought, surveys are conducted, and the area is overhauled to become one that is more biodiverse and supportive of an established ecosystem. Land van Ons plan to raise the water level in some areas, add fruit trees and more diverse grasses and perhaps erect a visitor centre for people to learn more. Derk is sceptical as "they want to make a kind of swamp. There is going to be growth, and a little bit higher [water levels], and they want to put fruit trees in it, but then you develop another kind of landscape. But…" he laughed, “I'm curious what people think about that". When I asked what he thought people might think, he added, “People don’t like change… and they will want to keep it the way it is. So you have to make it… you have to make a good story of what you’re doing and why you’re doing it."

Despite Derk’s fears, land purchased by Land van Ons is not always simply turned into a nature reserve. With the land at Oud Ade, there is demand for the land to become productive dairy land with a raised water level, so different breeds of cattle would be necessary[29], which is in line with the *Bestemmingsplan* of the area (the spatial planning directive). There will, therefore, not be a drastic shift in the land's appearance, and not the ‘swamp’ that Derk describes. For this project to be a success, it is hoped that there will be an opportunity for the land to be profit-generating and with sustainable farming. Although Derk is concerned about the project completely changing the landscape, a volunteer I spoke to was sensitive to what residents would welcome.



Area of land at Oud Ade (33ha) (Land van Ons, n.d.)

[29] These are smaller and have wider hooves, so that they do not sink into the relatively soft ground, for example

One informant described his fears as

> *If we're not able to make changes [towards having sustainable agriculture] then maybe the whole Green Heart will be a big swamp or a big nature area in 20 or 30 years, and I don't think that's what most citizens will like.*

For others, this pivoting towards nature-based land use is a good thing—a sign that things are returning to the way biomes 'should' be. Frans, a biologist, described his anxiety about the "shifting baseline" of animal numbers over his lifetime, as he notices there are fewer birds than in his childhood. Even this is a reduction of 'true' levels because populations had already been declining since 1850 (Netherlands Statistics, 2020). Pauly (1995) identified the idea of shifting baselines as "a gradual accommodation of a creeping disappearance of resource species" (1995: 430). *Weidevogels* (meadow birds) has become a totemic issue in the sustainability of the area, despite not supporting other species[30].

This disagreement on the basics of the land- and waterscape and its future shows just how much stakeholder opinions differ, and how attempting to reach consensus can be illogical. A councillor from Alphen aan den Rijn, Jacco, said meadow birds were “a big concern” for him when considering a sustainable future, but one that conflicted with other targets, such as a clean energy transition and housing construction. The emphasis on meadow bird population support necessitates radical land-use changes, and means that support of other wildlife such as insects has been abandoned in the Groene Hart (Tanis et al., 2020).

Below, Jacco describes how people perceive the landscape differently, in response to a question of how the council could support a more sustainable landscape.

> *The intensification of different agricultural sectors… has a huge impact on the landscape, and it is conditioning, as well. People grow up with green grass and think that that's how it is supposed to be, whereas if you show them a wildflower meadow, they love it as well, but they haven't thought about it. I did a project… with a group of dairy farmers in one polder, …and we discussed which measures could be taken to improve … chemical water quality and ecological water quality… One of the measures was, don't intensely manage your ditch, by moving them or clearing them or stuff, just let the plants, and the reeds, that are in there grow, so it looks a little bit wilder, but that's better for the*

[30] Notably insects, which have also been declining since 1900 (Netherlands Statistics, 2020).

> *insects and the birds. And a lot of farmers said "but I like those tight green clean lines, I love them. That's [what] makes me feel like I've got everything under control." You know, so it's perception… Things change.*

For these farmers, 'caring for the land' means having tight edges (see also O'Connell and Osmond, 2018), having nature ‘under control’, whereas for others, letting plants grow wildly is the most caring thing to do. One man who leads a wildflower seed company described how difficult it is for farmers not to associate a 'neat' farm with a 'successful' one. This duality is consistent with what Strang (1994) describes where two groups look at the land and see different techniques of care, and different possibilities for the future, creating difficult conditions for inclusive sustainability policy.

One interlocutor, Sammie, described her frustration at the neatness of the landscape, whereas others liked it. The "line" landscape, wherein the thin *slootjes* line the fields, she said is

> *typical Dutch and it keeps the view... of the countryside as natural,... as history. For farmers in this area it's forbidden to build, for example, corn or other weeds or to plant trees in the fields, because that's not grass, it keeps how it is.*

This didn't suit what Sammie thought the right thing was going forward,

> *[I think in the future] there must [be] millions more trees so I prefer to make a tree wall behind our farm to the highway side. To keep more quiet from the highway, [and] to clean air and for the water. For the water system, [and for better drainage].*

The noise from the motorway at the end of her farm was a major reason why she wanted to plant trees, alongside "a wind shadow or for privacy zones and sport". The proposal was rejected, and she said, "at this time it's forbidden", and the “policy” set by the “municipalities and government” meant the landscape must remain open, with only *Engels raaigras* grown.

> *That's the only thing possible here… [because of the] rules, how the lands, the country field landscape must look.*

There are small rebellions on Sammie’s farm. She has grown a wildflower meadow in one corner of the lawn to make it feel more natural, saying, "When I have just grass, I don't like it. It's not nature." In the summer, she lets weeds grow wild in the old farmyard, towering over the cracked concrete that they emerge from, their thick stems bending with the weight of nettle leaves and brambles. She shows me around her farm on a warm August day, while excitedly

pointing out the mess. “You don't need a licence for this”, she says to the brambles with a cheeky smile.

A "messy" water channel in a permaculture food forest.

3.3 Agricultural output: "feeding the world" and the intensification of farming.

This idea of the Netherlands "feeding the world" (Viviano, 2017) is a common refrain and seems to be a matter of pride for some and horror for others. It is unquestionably at odds with the discussion of biodiversity and raising water levels that I described in the previous section. The Netherlands is the second-largest exporter of agricultural products behind the USA, which is incredible considering that this is a small, densely populated nation of 17 million people on a land area almost 1/250th of that of the USA. One informant, Eva, said to me, "Feeding the world?! Why don't we focus on feeding our municipality?!" It is a debate linked to history and identity, having a history of post-war famine, as well as identifying as an export nation.

Frans detailed how the agricultural sector as it exists now was informed by Dutch history, especially in light of the Second World War, to me in an interview.

> *Sicco Mansholt… was a farmer in World War Two. He had a terrible life during that period… and [after] he was asked by the government of the Netherlands to become Minister for Agriculture. He had [three] goals. No more hunger… Second, a good price for the farmer. Third, [agriculture] must be efficient. He started in the Netherlands, and all*

the little farms, with measures to make them bigger farms, more efficient. Subsidisation for the milk, and the production, and ook [also] low price for the consumer. That was successful. And then he became Commissioner, for the European Unie. There he continued his vision. So in the whole EU the idea [is that there are] big farms, [and a] good price for the farmers, so give them subsidie[s], and third, a low price for the consumers. And what happens then?... You're too young to know the history. We cut in the European Union butter mountain, the boterberg. And milk… Too much butter, too much milk, because the farmers cut the price… so production was very successful.

A lot of our products [are sold] very cheap in China and to Russland. So it must be another way! And my opinion is that the farmers, who are the primary production, they [say] "I hope they get a good price." And it is the traders who earn money. They give you one cent for an onion, and it is a euro in the supermarkt. They give you two cents for an onion, and it is two euros in the supermarkt. And that system, and I don't know how to change that because… there is no market for the farmers. That must anders, [be] different. And when the consumers pay a little bit more for the product, that's good!

The Common Agricultural Policy (CAP) was created with Mansholt's experience of the Hunger Winter in mind. The Hunger Winter of 1944-45 was a dark time in Dutch history. Van der Zee (1998) describes people waiting for hours to access 300 calorie bowls of soup in Amsterdam, and quotes a military report saying, "Only 35% of the population in the streets were not malnourished (many lay at home in bed) 15% signs of malnutrition, 50% under nourished" (1998: 299). This has cast a long shadow, as has Mansholt's response, the CAP. In the panorama painting in Vicky's farm[31], he appears three times. Though there were many architects of this policy, he is credited in public imagination. The CAP symbolises restriction for some, though allows others to take risks with crops, knowing they can be paid for growing them even if they fail[32].

Another farmer bristled when I asked if subsidies should become more nature inclusive, saying,

Farmers hate the word subsidies and to be subsidised.

When I asked what I should call it, he said,

[31] In section 2.6.

[32] In section 3.6.1, on the financial situation of farmers, I describe how one environmentalist thinks that the relatively shallow scope of its subsidies is causing progress to grind to a halt.

They want to be paid for ecosystem services. When you're paid for a service… it changes the way you're thinking about it.

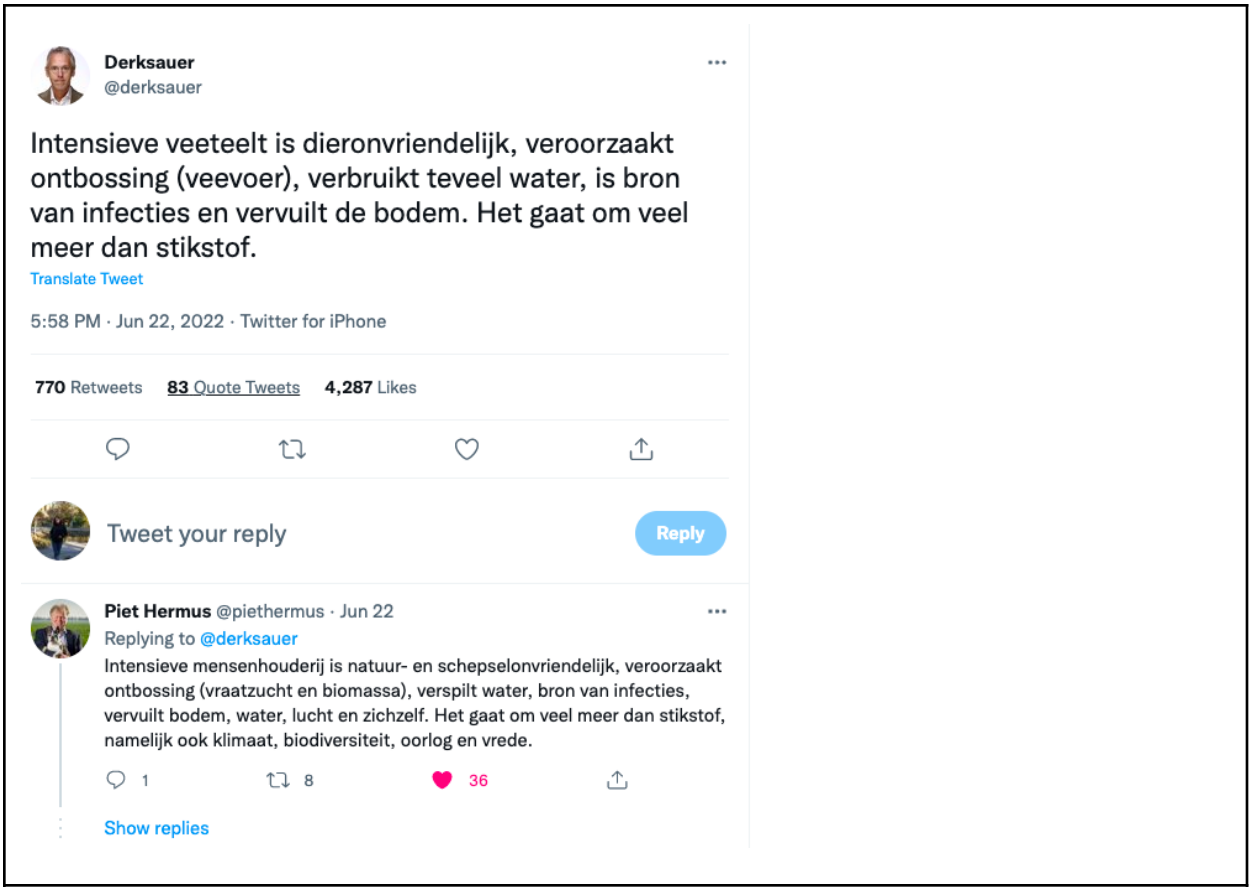
No matter what it is called, the process of providing so much financial support in a so-called "free market" is highly unusual, as Harvey (2005) describes. What's more, this may not be the solution that it is touted—Wynne-Jones and Vetter (2018) argue that though paid ecosystem services can empower and align farmers, it also works to depoliticize agricultural tensions issues, something that Li (2007) argues is a key feature of an assemblage. It can also work to unfairly emphasise the idea that farmers are sustainable stewards of the landscape, which they can view themselves despite contradictory evidence (O'Connell and Osmond, 2018).

A typical tweet exploring the debate on food output in the Netherlands, explained below (Olff, 2021).

This idea of intensifying farming can provoke fierce debate, which also exists in the online realm. One example of a wide-ranging debate is shared above. Screenshotting an article written by a Rabobank employee, the user above said, "That the current intensive agriculture is the result of a 'social demand for more food', as Rabobank puts it, is a myth, which is convincingly disproved in the new book by Auke vd Woud. Growth of export and economy was driving, and since 1850, not 1950." In response to this, comments included questioning the inevitability of capitalism (*"vraag naar economische groei is blijkbaar toch ook onweerstaanbaar voor de*

mens?"). Another user points out (in the tweet response above), "The fact that not all of that food was consumed in the Netherlands does not mean that there was no social demand for it. That economy has kept quite a lot of Dutch people warm enough to get through the cold winters." With the original tweeter responding, "Never again hunger". One response to this is a user saying, “What matters here is the correct interpretation of history, not the question whether economic growth is also useful." The first user doubles down, writing, "Hunger and poverty have always been used synonymously in historical context. Still, in many parts of the world you are only poor if you have trouble getting food." This interaction, and many others like it, demonstrates that when agricultural output (and its connotations) is discussed, a traumatic history is trawled over, and the nature of capitalism and Dutch identity questioned. Karlsen et al. (2017) write that online discussion is often alike to "trench warfare", and arguments often solidify points of view. They describe how "people are frequently met with opposing arguments, but the result is reinforcement of their original opinions and beliefs" (2017: 270), as opposed to the 'echo chamber' interpretation of online interaction as described by Sunstein (2001). In these arguments about agricultural output and its ramifications for the Dutch economy, we see how fractured and heated debate becomes. The interaction above is one of many and shows how quickly debates over agricultural output have become inflated and emotional, tied to national pride, national history, and the nature of capitalism.

Beyond these debates on historical reasons for intensive farming, other online debates are concerned with the nature of intensive farming, and how it is socially and ecologically damaging. Below I quote one tweet, which captures much of the spirit of this wider debate on the unsustainability of intensive farming. This was a point that other, in person, interviews shed light on too, and below I describe an interview with rural policy advisor Josien who shares similar ideas. She especially focuses on how intensive farming has meant that people are more separated from their food, and by reconnecting people with the food they consume, farmers can command a higher price for the food they sell, while raising ecological standards.



First tweet reads, "Intensive livestock farming is unfriendly to animals, causes deforestation (animal feed), consumes too much water, is a source of infections and pollutes the soil. It is about much more than nitrogen." (Sauer, 2022)
The reply says, "[Consumerism][33] is unfriendly to nature and creatures, causes deforestation (greed and biomass), wastes water, is a source of infections, pollutes soil, water, air and itself. It is about much more than nitrogen, namely climate, biodiversity, war and peace." (Hermus, 2022)

As above, some informants expressed concern at intensive farming and how this leads to people losing connection with where food is from, with consumers unaware of farming or worker conditions. This sentiment was also echoed in my in-person interviews. Below, I quote Josien, a rural policy expert, who describes how the chain between consumer and farmer should be shortened for a more sustainable future. Sustainability, here, can be interpreted as being an environmental, social and economic concern. She argues that the proximity of the Groene Hart to population centres could allow for more links, leading to "valuing" food and its production more.

[33] I have translated *intensieve veehouderij* as consumerism for ease, but it is referring to how new technology has created the circumstances for an ever-increasing demand for products (Peters, 2021).

> *If [the Groene Hart] being valued as the 'green lungs' of the metropolitan area while also being the food production grounds of that metropolitan area, that's what might be the way out. If you can shorten the chain of production to consumption, people reacknowledge where their food is coming from and what has to be done to make [it] available to them. Then they might value it more. If you can buy your milk straight from the farmer, and you're happy to pay two euros for your litre, instead of paying 1.50 in the supermarket with all of the links in the chain in between it, that farmer earns more money and you have more value, because you know where it comes from. You can make a bigger difference. You have this initiative called Herenboeren*[34]*…*

Here, Josien describes the importance of people being linked to the food they consume, while emphasising local links to it. She said shortening the production chain might be a solution to getting more money to the farmers, something echoed by Frans earlier in the section, with how little of the sale price at supermarkets farmers get paid for livestock. She touts one possible solution as the Herenboeren Initiative, which van der Ploeg (2020a) also names as a possible solution to the financial and ecological bind that farmers find themselves in. It's possible, however, that more localised, smaller production would not be enough to calm the cries of "never again hunger" as seen in twitter exchanges.

Agricultural output in the Groene Hart sits at unsustainable levels, no matter the type of farming that exists in it. The way through reducing this output will be strained and conflicted, and stands at odds with the growth model of Dutch capitalism, and with identity as exporters. To have such a tiny area of such a tiny country have such a huge output means that the waterscape is strained—biodiversity cannot thrive, water levels are kept low and Nitrogen use is skyrocketing, as discussed in the next section.

3.4 The *stikstof* debate: issues of nitrogen

In the previous section, I discussed the intensification of farming, which has caused a crisis of nitrogen in agriculture. Nitrogen levels is an oft-repeated argument in the land-use debate, and recent legislation has stirred controversy. As a result of the policy to reduce nitrogen oxides by up to 50% by 2030, there were huge protests in summer of 2022, with shots fired by police at protesters as the conflict became increasingly ugly (Washington Post, 2022). In the following section, I cover why Nitrogen is so harmful to the planet, the role of misinformation in farming communities, and question whether farmers are expected to change more than other polluting

[34] Explained in a footnote in section 2.6.

industries. I finish with reflections and reactions on the European Court of Justice (ECJ) ruling that emissions must be cut by 50% in the Netherlands by 2030.

Nitrogen occurs naturally in the environment but becomes problematic when binding with other chemicals in industrial processes. As a gas, nitrogen is abundant in the environment and relatively harmless. It makes up 80% of the air we breathe, and in natural concentrations is a reason that soil is fertile. The issue lies in the high levels of nitrogen added to soil as fertiliser, which can fuse with other elements to create hazardous chemicals. When fused with hydrogen, nitrogen becomes ammonia, a gas which harms respiratory and ecosystem health when entering the atmosphere. If nitrogen is combined with oxygen, as happens with traffic and in industry, it becomes nitrogen oxide (NOx), a greenhouse gas. Excess levels of soil nitrogen cause soil acidification, and this and runoff into streams causes biodiversity loss (Johnson et al., 2005). Furthermore, nitrogen oxide forms fine particulates and smog as detailed by Erisman et al. (2001). In 2019, a decision to end building permits and halt the expansion of livestock farming was met by huge protests in The Hague (Stokstad, 2019), which triggered further protests around the country, including a tractor breaking down the door of Groningen council offices. These infamous protests shocked the nation in their scale and ferocity, and is often considered a watershed moment in national and agricultural politics. The debate around reducing nitrogen emissions was one of the principal debates of the 2021 election (van Holsteyn and Irwin, 2022).

Discussing farmer frustration, a representative from a farmer's union outlined the issue of scientific issues and misinformation.

> *They are angry and sometimes they don't understand. But it's also very complicated so… You have the Stikstof [nitrogen]... it's very scientific… So when it's technically difficult, then it's very easy to spread rumours that don't... that doesn't work.*
>
> *Also from both parts as well from the farmers side, sometimes there are stories that don't fit the scientific truth and but also from the other side are sometimes rules that work the wrong way, and so when a farmer understands that… when there are rules he has to fit in, but it's very difficult for him in his company, in his business. And… that's very frustrating.*

Some farmers felt that they were expected to change more than other industries. On the other hand, one informant dismissed fears of agri-bashing outright.

[Being unfairly targeted] is one of their talking points, that there's all of these nitrogen regulations. But in reality, they are one of the most heavily subsidised economic areas in the Netherlands.

Nitrogen emissions from Dutch intensive farming are high and can seem like an easy area to tackle as efforts are made to reduce national emissions. On the other hand, it can seem that other sectors are allowed a free pass. Transport and industry are oft-cited sectors where nitrogen emissions are rising, whereas farming is perceived as having to make huge changes over the coming years. Below is one sample tweet on the topic, among (genuinely) thousands.

Tweet, originally posted by the leader of Mobilization for the Environment, and reposted by @caringfarmers, both organisations focusing on more nature-based agricultural practices.

Another issue is that nitrogen in agriculture seem natural, as opposed to other sources such as heavy industry or aeroplane emissions[35], and is seemingly a non-negotiable output of animals. When animals graze and defecate in fields nitrogen is added to the environment. Some farming practices raise nitrogen levels more than others, however—nitrogen usage is high in the Groene Hart because feed is often imported soy, and having three times the number of livestock that the

[35] Two sources bemoaned as allowed to exist by informants.

land could 'naturally' sustain. These practices create the highest emissions per square kilometre of land in Europe (European Commission, 2020). There are things that farmers can do to reduce emissions—they can farm more extensively farming practices, restricting livestock to more natural levels. In addition, cows could graze as their sole source of nutrition, rather than relying on soy, as one informant described, "from Brazil". Making these changes would be radical undertakings, especially considering the farmer 'lock-in'[36].

An example of extrapolation of the Nitrogen debate. Tweet reads, "All farmers must leave because the nitrogen is bad for humans (nature cannot function without nitrogen). Cigarettes that are bad may still be sold despite being bad for humans"

Alongside debate on the naturalness of farming emissions is a debate on nitrogen levels themselves. Radical pro-farmer organisation Farmers' Defence Force (FDF) takes issue with the figures provided by the official statistics agency RIVM (Stokstad, 2019). Because the rural lobby is so powerful in the Netherlands, the Dutch government allowed high nitrogen levels when Europe-wide reduction targets were created. This was on the proviso that there was technological possibility of future reduction, such as air scrubbing technology (Jacobsen, 2019), which would provide a technical fix without significant upheaval. Reversing this decision was tense, which I explain in more detail below. One farmer was quoted in the newspaper Trouw describing "city types" who patronise farmers, putting them in the "verdomhoek" (dunces' corner) and telling them how things should be in the countryside (Hakkenes, 2019).

In 2019, the Dutch government was given a stark warning that nitrogen policy must change with a ruling from the European Court of Justice (ECJ) (Pira, 2019). This triggered building permits to be halted, limited speed limits to 100kmph in daylight hours and ramped up pressure on

[36] Explained further in section 3.6, the financial situation of farmers.

farmers. This was the catalyst for the 2019 farmers' protests (Stokstad, 2019). The effects of these measures are felt differently across society. A commuter slowing 30kmph is annoying, but not life changing. For an agricultural industry already in crisis, restrictions seem to be a death knell made by an unsupportive government, especially when it comes to things like ‘stable innovation’ (Jacobsen, 2019), i.e. material changes that farmers feel they are being forced into. As one employee of LTO said, "a barn lasts for 10 years", and if a farmer has to replace that barn due to changing regulations, this cost is potentially devastating. Neither do the changing regulations inspire confidence. One informant described how he thinks politics is much 'faster' than investments on farms, and there was constant fear that regulations would change again. While the electoral cycle lasts just four years, people pay for (and pay a mortgage on) barns over a 30-year time period. This resistance to include politics in governance is something that Li notes as a feature of the assemblage (2007).

In response to the ECJ ruling, the Dutch government announced that by 2030, livestock numbers will reduce by a third, using buy-back schemes for land, and overall emissions will have to be lowered by 50% (Washington Post, 2022). Subsidies are available for extensification, more innovative barn use, and landscape management, in order for farmers to be less reliant on loans. There is another argument that farmers are too economically protected, but nevertheless, they are now in the thick of this system, their hands are tied, and the lock-in is in place (Gerritsen et al, 2020). There do not appear to be many ways through this, and resolution is not feasible to please everyone. In the following section, I focus more difficult questions for the Groene Hart, on questions of land use.

3.5 Land planning: "Houses or cows? Houses or cows?"

A further difficult bind is the question of whether to use land for housing, or continue agricultural use[37]. In the party leaders' debate before the parliamentary elections of 2021, Jesse Klaver, leader of GroenLinks, put the land use question in stark terms, saying "wil je koeien, of wil je huizen?" (do you want cows or do you want houses?) (NPO, 2021). The government has pledged to build one million homes in the next 10 years, a significant increase on the eight million houses already existing[38] (CBS, 2021). Many of these will have to be built around the Randstad and Groene Hart. In the next section, I discuss the price of land and how that drives further difficulty, and how there is a dearth of affordable housing in the Groene Hart. To finish, I

[37] This also has ramifications for nitrogen output, as construction work is incredibly nitrogen intensive, shown in the 2019 decision to pause building projects under a nitrogen output review (Stokstad, 2019).
[38] Of which one million have been built since 2005.

discuss how the fact that there are many committees working in the area means that decisions can be slow and seem apolitical, as Li (2007) discusses in relation to assemblage of resource management.

As I previously described, the price of land in the Groene Hart is astronomical. At up to €80,000 per hectare (Gerritsen et al., 2020), it is among the most expensive agricultural land in the world. This high price of land, with low revenue, means farmers can "live like beggars, even though they are millionaires", as multiple interlocutors described. It is also the reason that many farms cannot expand to be more profitable larger farms. On this, one ex-farmer said that it was causing people to leave the Groene Hart, saying

> *"The prices of land are so high over here so growing isn't a very appealing idea… A lot of them migrate to other parts of Holland".*

One reason for these high prices is the land's fertility, as well as proximity to huge metropolitan areas. Years ago, this meant access to markets. Now, it means access to childrens' education, and spouses who can work in the cities to balance unpredictable agricultural income.

Another reason is that farms are small. A farmer described to me how historically, upon a farmer's death in the Groene Hart, all their children inherited a piece of the land, rather than just the eldest son. Over generations, farm sizes reduced significantly, and now they are typically thin and long, with a squat house facing the street. This means that every square metre is vital to the property. I spoke to two people who held onto land despite this being a financial burden, because they felt that ownership solidified "their role" in caring for it. This is also linked to how they treat the land, and preserve it in a way that keeps its value, often to the detriment of the waterscape.

When farmers do sell their land, often ex-farm buildings are bought as housing. Kees described to me how,

> *Most of them are bought by people who are loaded with money, and they don't interact with the local community, they just live there. On this lake there are four farms, this is still an active farm, over here, a family lives, but... and then there's a farm bought by someone from Esso with a lot of money, who broke it down and built it up again.*
>
> *Ah it's... a nice guy, he interacts with the [community] but there's only one family [there]. On another farm… they made four houses, so you do have a small kind of community*

again, and that [is better]. In former days, the farm was also always a community. We had a farmhand living on the farm, we had a maid, and there were large farm families, so… 10, 12 people. And now I live here with [my wife], and that's it!

… Farms should be small settlements or small communities[39]*.*

Here, we see how the cost of land and farm buildings can stoke the urban-rural divide, when houses are bought by people who "just live there" and don't interact with rural life. To Kees, it's better for a farm to house many, though logistically more difficult. Eva voiced a similar perspective. She owns a permaculture food forest near Benthuizen, and worked in youth homelessness before. She emphasised the importance of affordable housing in rural areas, describing how the municipality of Alphen aan den Rijn was selling off plots with planning permission, which were, at times, being bulk-bought, to build a huge house. In the scheme, all houses were large villas, which are carbon intensive to build, heat, and maintain. As in many other rural areas around Europe, especially those close to urban areas, there is a huge affordable housing crisis in the Groene Hart. Young locals cannot afford to have houses close to their communities, putting the future of these areas in jeopardy. This drives further schisms in the waterscape, and makes sustainable policy more challenging. Not only must the *waterschap* cater for this building work and strains that housing puts on the waterscape, but also the constituents that this encourages, who may pose barriers for policy change.

The issue of land use planning in the Groene Hart is complicated by the number of committees concerned with land-use. One anonymous informant said how, "There are three committees for every square metre of land in the Groene Hart!". Another told me, "In the western part of the Netherlands there are a lot of claims on the same acre," and "regional planning is difficult". This means that any decision-making progress is incredibly slow and difficult to negotiate, with different stakeholder groups having a well organised, often vocal presence. Cuppen (2018) argues that 'organic involvement' of interest groups is in itself productive, because they show the extent of local sentiment. Such groups are seen in the Groene Hart with collectives such as TurbulenT, a group mobilised against the building of a so-called super-turbine (turbulent.nl, 2021) in Alphen aan den Rijn. Li (2007) writes how the assemblage of land management can render political issues technical, and can mean that stakeholders attempt to disentangle messy social perspectives into technical problems that can be solved with a technical solution. This effectively pulls these personal narratives, ones of an affordable housing crisis taking shape

[39] This concern with cohesion also relates to the rural-urban divide, as described in section 3.1.2.

while villas are constructed, of community farms being owned by one man, of the perception of a rural-urban divide, into a series of technical questions of how value can be extracted out of the land, and how water levels can be legislated through.

This question of transforming farmland into housing is inextricable from how the waterscape is managed—as land is drained for housing, the peat meadows die and begin to subside, ending with lower land levels and increased greenhouse gas emissions. With developments, water levels remain low to keep feet dry and domestic gardens maintained. It also dictates who can live in the area—if plots of land are bought by one person, and only housing projects for detached houses get planning permission, then everyone other than very wealthy people is shut out of the countryside. Our social lives are embedded in the waterscape, seen in how land has been passed through generations, and disdain for sole occupancy farms. *Waterschap* sustainability policy must include the changing face of the rural community, and be flexible to changes in demands on the landscape. Solutions that are this complex and this social do not have easy solutions.

3.6 The financial situation of farmers

As I described in the previous section, the cost of land in the Groene Hart means that farmers often cannot expand their farms to be more 'efficient' (intensive). It can also be a barrier to creating more sustainable policy—if farmers were not so embedded within an expansion-based financial structure, then there may be more possibilities of slower, more extensive, more water-supportive methods of farming. In the following section, I will outline the "lock-in" of financial structures, and how this creates a perceived impasse between environmentalists and farmers. Later, I will reflect on how competing agencies emphasise the role of technical solutions, closing off more radical (and effective) structural ones.

The role of financial structuring in the Netherlands was emphasised by some of my interlocutors. One ex-farmer pointed out the debt system, which is described in more detail by van der Ploeg (2020a), who then draws a link between the financial institutions and right-wing populism, as farmers feel they have no alternative but to live in the current system of hyper-intensive farming. One interviewee in Akkerhuis' dissertation (2020) describes a farmer's economic position as one of a "lock-in", saying, "First of all, you have the role of Rabobank, which whips up the farmer by only giving him a loan for a new stable if he takes 40 new cows. Then you have the fodder, the nitrogen industry and the manure processors, all major players where farmers have come into a dependency

position. It is not only the banks that lend money to the farmers, but also the animal feed industrialists, and therefore it is in an agro-industrial complex" (2019: 38). Van der Ploeg (2020a) describes how the structure of these loans encourages farmers to intensify, in a way that it is often impossible to get out of.

As farmers have very high value assets although they may have low income, they are offered loans at a very low rate. One farmer said, "The interest rates are low at the moment, but the revenues are also very low", so they are encouraged to continue to borrow to plug this gap in income. So while the value of farmland may be 60 or 80,000 euros per hectare, they may only be kept afloat by a series of loans, which often require growth to release more capital (van der Ploeg, 2020). In response to growing levels of pollution, especially in the wake of changes to nitrogen policy, the government has begun a buy-back programme of farms. This has been met with anger on the part of farmers, who argue that many farms will have to be repossessed (van Rooijen, 2022[40]).

From many sides, we see how this financial structure can be interpreted as leaving farmers in a bind, and while environmentalists may blame this on the farmers themselves, there is often little alternative. In a system of incentivisation, it can seem like there is only one way to go—more intense, more cows, more nitrogen. There is a saying, "We can't think of the green unless we're in the red"[41], meaning that more sustainable decisions cannot be made while farmers are dealing with a state of constant losses, something that Kees describes his decision to give up farming, calling it a "dead end".

This hardship on the part of farmers, and perceptions of blame on the part of environmentalists, locks both parties into a system of not being able to imagine another reality. One environmentalist told me, "[Farmers are] the most heavily subsidised economical areas in the Netherlands", dismissing my description of regulations as "one of their talking points". He explained how systems of financialisation could be a solution to the crisis of emissions.

> *…ecosystems services, and it tries to financialise "natural" areas [and] of course there is a lot of value to biodiversity. And secondary to that, swampy areas provide clean water. And it's a carbon sink, so if you see carbon emissions or something that you taxed, conversely, carbon emissions that don't happen can be subsidised and could be worth*

[40] It can be noted that the original tweeter has her on the way to the farmers' protest as her "pinned" tweet.
[41] *'We kunnen niet groen denken als we rood staan' (*Queisen, 2020)

money as well.. there could be financial incentives for them, in that sense. Increasing water levels could be economically sensible and there are some crops that can grow on them. Some lettuce variants, some swampy plants, like cattails. They can be used for different types of things, but obviously these things are going to be less profitable in the short-term and in real money terms, as the milk production is right now. The [Common Agricultural Policy] is impeding these kinds of conditions.

A pivot towards ecosystem services means that engagement in the waterscape would necessarily change, as more sustainable engagements with the land are monetized. This would mean that sites of carbon capture are valued, which some see as a promising development, as we can see from the tweet below.

This newspaper clipping shows how there are many people with vested interests in keeping things as they are.

> *"Intensive and capital-intensive agriculture has many stakeholders who are not farmers and prefer to keep agriculture as it is. These include Rabobank, animal feed companies and other banks that do not benefit from change. Somehow, changing agriculture will cost a lot of money. Who will pay? As a student and dairy farmer, pointing at Rabobank (comment, 2 February) is too simple and unreasonable for me. Only when the farmer can earn an income from biodiversity, meadow birds and nature, will things change. The bank certainly wants to facilitate sustainable agriculture if the farmer and the bank can earn money from it, but unfortunately it is not yet there."*

The online debate on ecosystem services is lively. The above tweet was posted on twitter by a dairy farmer, with the caption "uit mijn hart gegrepen" (taken from my heart) (Apeldoorn, 2021). The original letter writer is a young farmer who is concerned with the future of sustainable farming, especially from the perspective of a change in revenue models (Hoekstra, 2021),

something that water boards and other legislative bodies can account for and incorporate into future plans.

Harvey (2005) states that agriculture is an exceptional arena in the European context and that it is "protected" for "social, political, or even aesthetic reasons" (2005: 71) while other sectors are subjected to free trade (that he would call damaging for labour markets and consumers alike). This, he says, seems "arbitrary" (2005: 71), but I would argue that it is an indicator of the importance of agriculture in Europe, something my interlocutors emphasised. Even to non-farming rural residents like Josien. It was vital that the party she voted for had robust agricultural policies, and when she heard that her boyfriend was planning to vote for a party which did not have good policies, she ridiculed him. For this reason, very few parties in the Netherlands come out with explicit anti-agriculture policies.

The neoliberal political climate means that radical solutions cannot be implemented (Blyth, 2002). In my theoretical framework, I quoted Fisher, who wrote that it is easier to imagine the end of the world than the end of capitalism (2009: 1). Blyth (2002) criticises potential solutions to neoliberal thinking based in market logic, saying that ‘cognitive locking’ means that people are unable to think beyond the norms set by neo-liberal capitalism. He is describing the ‘solution’ to Sweden's declining economic position, which was seen to be joining the EU, however, Blyth says this just further entrenched Sweden's liberalism and deepened social inequality. The same thinking could be applied to some proposed solutions to the financial lock-in of farmers. Ecosystems services could further entrench the financial dependency on non-farming institutions. Many current policy responses do not change the conditions of farming, or else, as with buy-back schemes, would simply end farming, with no thought to how this will affect communities. Hajer (1995) puts anti-technological ideas into the Dutch context, emphasising the need for radical structural change. By emphasising technocratic solutions, he writes, the Dutch government is closing itself off from far more transformational policies (1995). In this sense, ecological modernisation has "distinct affinities with the neo-liberal ideas that were in good currency in government think-tanks and advisory agencies during the 1980s, especially concerning the need to restructure the industrial core of the economy of Western countries" (1995: 33).

The issue of finances and farming, for me, embodies the extent to division in debate in the Groene Hart, alongside how much identity can play into these divisions. While for most,

changes in revenue models to one of landscape services seems like the most radical possible pivot, this thinking is still entrenched in existing financial systems. While there is also common interest in the continuation of farming under a challenging financial landscape, future visions of different stakeholders differ hugely. There is no one-size-fits-all solution to this bind, and is a prime example of how a solutionscape could be used (Fallon et al., 2021). With a collection of realistic imperfect solutions for different aspects of the problem, and an emphasis on dialogue and disagreement, trust of the *waterschap* can be built (Fallon et al., 2021; Cuppen, 2018).

3.7 The question of reducing livestock

When discussing the future of agriculture with an (anonymous) ex-farmer, I asked whether he thought that livestock numbers needed to be reduced. He shifted in his seat and after a moment of silence, said, "They do, yeah. They do. But don't put my name next to that. I can't have said that." He then laughed awkwardly.

His reaction shows how personal the issue of livestock numbers is. When discussing the future of agriculture, my informants often skirted the question of whether numbers should reduce. This farmer was the same—he could not openly discuss the need to reduce numbers, or fear of personal or professional fallout. This has ramifications for water levels—current common breeds cannot walk on the grass without sinking, and such a high number of animals need more grass as feed, heavy machinery must be driven over the land. The need for polder-wide consensus between landowners makes water level consensus difficult; this farmer's comment shows the social tension at play, even though he is concerned with sustainability. As an example, this farmer is part of a sustainability collective, has made commitments against nitrogen runoff by not spreading wet manure and has limited grass cutting by 50%. So in many ways, this farmer acts 'sustainably' both publicly and among peers, and yet was afraid to affirm another basic sustainable position, a reduction of livestock numbers.

The question of whether animal agriculture can be allowed to continue as it presently stands has become a totemic issue; to say that it should be reduced for the rest of the country is to effectively disagree with agriculture as it currently exists. What is more, farmers often do not feel appreciated; in the Staat van de Boer, a survey by Trouw newspaper as quoted by Veens (2019), found that 80% of the 2000 farmers polled did not feel appreciated in their position, and 85% of farmers felt that agriculture in the Netherlands is at a point of crisis. It should be noted

that this report has been criticised for not showing attitudes accurately (Wierenga and Wiskerke, 2018).

I asked the ex-farmer whether other people involved in agriculture think that the number will be able to stay the same, and he said,

> *I think a lot of people know that's not going to happen. The numbers are going [in one direction], but they don't want to admit it, so we need a strong government to make that decision, and explain to farmers why they make the decision, and… how they are going to compensate [for] that.*

I asked then whether the current government would make that kind of statement, and he added,

> *No, the current government... ha! The current government... (sighs) The number of people making a living in agriculture is so small, it's only 5%. But other people are concerned, so they will not make a strong statement against it.*

Even farmers who no longer have livestock are reliant on the current system, with selling grass to intensive farmers, and then being paid for spreading manure on their land. Vicky described to me how manure spreading can make up to 30% of a landowners' income. Although the above farmer has slowed his grass cutting schedule, he still sells it to an intensive dairy farmer. Even though both landowners that I draw on here have opted out of the intensive farming system, they are still reliant on it.

This tweet from a farmers' protest reads, "Farmers stand with two cows in front of the Tweede Kamer (Dutch House of Representatives). ‘The minister will soon be able to choose which one should be slaughtered, because we have to reduce, right? We can no longer choose. They are kind of your children,’ said one of the farmers." A tweet in response to it wrote that the average life expectancy of a dairy cow is four years, compared to a 'natural' life span of 15-20 years.

Reducing livestock can be a way to reduce the intensification of farming, and thus provide opportunities to raise water levels and plan for a more sustainable future. However, given the difficult financial situation of farmers discussed previously, this is incredibly challenging. I describe this conflict in order to illustrate another perceived impasse when it comes to changing water levels, to show another conflict where resolution is seemingly impossible.

3.7.1 "Farmers are no longer just farmers": The need for “nevenactiviteiten”

As I discussed in the previous section, the financial situation of farmers makes it challenging to make sustainable changes in the Groene Hart. One way for farmers to make more sustainable

transitions[42] is through *nevenactiviteiten*, or side activities. I begin this section with testimonies from informants such as Vicky and Jan, how in both cases, farmers did not want to stop farming, but had to in order to have a more economically sustainable life. In the next chapter, on future solutions, I will reflect on whether this is a way through the crisis of farming that I began this chapter on, or a deeply flawed stopgap.

If you were to ride your bike through the winding lanes outside of Alphen aan den Rijn, on roads that start straight then cut at right angles to accommodate for fields, you would see that the way is dotted with little signs for a farm shop here, an activity centre there. What you cannot see is that the farmer's wife is a French tutor as well as a teacher, and that another farmer actually earns money from selling grain, his traditional profession reduced to a source of cultural capital, rather than generating enough income to support his family. Below I share two stories of farmers[43] who were driven out of the profession by the need to diversify.

A recently retired farmer, Jan, told me that in the last 10 years of farming, he was making the bulk of his income through selling cattle feed, rather than milking cows.

> *Prices were very low... The costs were about €0.35, and the revenues were €0.27, [and] you have to work 7 days a week.*

Keeping afloat meant selling cattle feed and being an agricultural advisor to different agencies, using his status as a farmer as legitimacy for these roles rather than as a source of income. Since stopping farming, he has made money through providing lodging for rent on a long—and short-term basis, something others often do alongside having a working farm. "Farming is the best," he told me, but it became more like an expensive hobby, and after a year of making a loss, he decided that it was impossible. Land is very expensive, and one of the only ways to make money is to have a huge farm, so expansion was not an option either.

> *"The costs are too high… When you want to grow you have to buy land, at 60, 70, 80 thousand euros per hectare. So you have a lot of capital invested in your farm."*

For him, this decision was sad,

> *"When the cows went [from my farm], the first year, I couldn't go into a stable in another farm. It hurts [too much] to watch."*

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[42] This is also used by farmers who have no interest in being more sustainable, in an attempt at financial security in an uncertain industry.

[43] Both of these people identified as farmers, though they acknowledged that others may not recognise them as such. Vicky describes herself as a "cultural farmer", though says others do not see her as such. Jan told me that though he no longer farms, he feels that you never stop becoming a farmer.

Even though now, his work is "easy" and "interesting", it's not the same.

> *"I was in a period of mourning... I think I still am a bit."*

Farming allowed him to exercise skills he had taken a lifetime to build,

> *"You have to have some knowledge about everything, you have to know about the weather conditions, where grass grows, you have to know about your animals, you have to know about feeding, you have to be a small kind of vet!" He laughed and went on, "You have to be mechanical, it's very diverse, what you are doing."*

The reason for ending practices was just

> *"the money,… it was not possible anymore."*

Vicky described how her father was ill with cancer and had just turned 70 but refused to give up on working with cows. "From 2004, he had a form of cancer, he was alive until 2012, so eight years he was keeping cows to make them fat. So he buys them thin, and he feeds them fat—so that he was a hobby farmer." Even once he was physically unable to work, he wanted animals around him, as if the farm was still working. "And from 2012 to 2015 he was very ill and he died in 2015 then he was 79 or 78... And in the last few years of his life we held here cows from other farmers and sheeps so they did their work [here]." That is to say, farming is not simply used as a job, or a way to generate income. It is tied to how people view themselves and others; it has been the basis of community cohesion for centuries (Sarker, 2017). With farmers leaving the profession, and the fact that "farm buildings are being converted into these very expensive houses and no one who worked in that farm or lived there [before can] afford to live there", Vicky said she was worried "there is a risk of losing the kind of spirit of the countryside". Growing up on the farm before leaving and travelling extensively gave her the impulse to bring these two groups of people together, through events, arts, and culture. In the case of her father, however, she feels that there was no alternative. "A farmer, you will never get him [away] from his farm." This emotional relationship that farmers have with landscape, labour and identity (Holloway et al., 2021) complicates decision-making.

As Vicky described to me, “Everyone does something other than farming”, out of economic necessity. This could also pose an opportunity for a more sustainable future—one with varied income and land management techniques. As is evident in the next chapter, as we look to a future of the Groene Hart, solutions to the crisis of sustainability will form a patchwork, taking into account multiple perspectives, ideas, and priorities. Varied income from agricultural work is

part of that. I have drawn on two farmers' stories who diversified because of economic necessity, but this can be an opportunity for sustainable changes, too.

The future of the Groene Hart

In the previous section, I described how conflict in the Groene Hart combines to create a complex tapestry, with farmers often feeling that they are in a bind, and environmentalists emphasising the need for changing waterscape management in an effort to slow the climate crisis. Between these two groups, there are crossovers, too, and many feel the pressure from both sides internally. In the following section, I try to show some ways through this difficulty. To begin with, I reflect on the Polder model, a traditional way of handling conflict in the Netherlands, and describe how this focus on resolution may be unproductive when it comes to problems in the Groene Hart. Later, I describe how inclusive decision-making processes take shape, and how it is vital that everyone feels they are heard when it comes to water management in particular. Then, I focus on diversification strategies, and how (eco) tourism, care farms and new types of agriculture can be more financially stable methods of farming. This links to alternative agricultural models more widely, including community-lead farming and permaculture food forests, which are radically different from traditional agriculture, but which do place the needs of the waterscape more centrally than the current, for-profit model.

O'Connell and Osmond argue for farmers' views to be considered an assemblage, making isolating key factors almost impossible. Even if transition to sustainable water governance is economically viable, it must also be appropriate culturally and socially. In thinking along these lines, we can see how there are multiple pathways to a patchwork of solutions. Also useful in considering governance for the future of shared resources is the work of Li (2007), and assemblage in forest management. Using her ideas of the assemblage, we can see how there will be many imperfect solutions to sustainable, representative governance in the Groene Hart, which, I argue, form a "solutionscape" (Fallon et al., 2021).

4.1 The Polder Model: weighing up differences, reaching consensus?

Describing the need to "polder" in the waterscape, Matthijs, an advisor on water levels for Rijnland *waterschap*, told me, "We have to negotiate. And think over it and discuss, come somewhere halfway, meet each other somewhere else." This is a key aspect of the polder model—it is not always a compromise, but may lead to a new solution. Timo described the polder model as a method of negotiation where there are many interested parties. "If you have to deal with a lot of different stakeholders, you have to look at the interests they really have, and you will find that they are not always opposing each other, but there are lots of things that they have in common. That will help. That is not the final solution, but that will help."

The polder model, named after the low-lying land reclaimed from the sea, is a style of agreement and negotiation originating in the Netherlands. It is believed to have begun with the Wassenaar Agreement, which came out of a gridlock in talks in the 1980s between the Dutch Government, unions, and employers' associations, where those involved decided to restrict wage growth in exchange for shorter working hours and increased employment levels. In this negotiation, all three parties were heard throughout, a tradition that has continued in Dutch negotiation and debate (de Vries, 2014). It is similar to the mutual gains approach, wherein first of all, people agree on certain issues, then discuss an ideal outcome for them both, and see how compromises on disagreements might be reached (Schreuder, 2001). Both emphasise the need for collaboration and are useful tools against negotiations breaking down. However, negotiations are further drawn out, and considering the lengthy process of water negotiations already, this approach is not necessarily easier (Schreuder, 2001).

The polder model has also thrown up problems in more recent debates, with the corona and climate crises; in these instances, only some groups are speaking on behalf of a measurable 'truth'. It seems self-evident to an outsider that we should not be giving weight to a conspiracy theorist who believes vaccines are a hoax, but under this model, conspiracy theorists have the right to be heard (Forbes, 2020). Acknowledging people's perceived differences can be beneficial as it can highlight how these are overblown compared to actual differences[44]. This demonstrates how identity can be a false difference between stakeholders, which is important because people's ideas of themselves and others can dramatically alter what they see as possible futures (Janssen et al., 2022), and restrict progress on decision-making in the commons, especially water (Anand, 2007). This is relevant to the water board and their plan for inclusive consensus in the waterscape, and highlights how sometimes, "poldering" between groups with such divergent views is not possible or even desirable.

Schreuder emphasises that trust can be difficult to obtain from separated groups, even as common interests align, such as with averting the effects of the climate crisis (2001). In order to build trust, she says, all concerned groups must be invited to the negotiating table, and not left out, as environmentalists were in the negotiations around the formation of NEPP (the National Environmental Policy Plan) in 1989, and in subsequent renegotiations (which happen every four years) (Resource Renewal Institute, n.d.). Early stakeholder involvement in water governance

[44] As illustrated in section 3.1.1 on the rural-urban divide.

planning can also increase trust (Fallon et al., 2021), and encourages what Green and Chambers (2007) call "enfranchisement", a bringing-in to democratic processes.

Andreas, who works for the farmers' union LTO, describing the importance of cooperation, said,

> *I think we have some beginnings of those big changes, [like] more intensive cooperation between nature conservation companies and farmers, for example.*
>
> *We have some good examples, [of] farmers, doing their business in a more extensive way, so not adding more techniques, but going back [to a] natural way of doing their business… [if] they do some good things for nature or water quality but it's really hard for them to get paid for it, in the price people want to pay for the product, so when you're good at the planet side you... that it's not a guarantee that you'll have good profit too.*

However, there are disadvantages to this approach. In my interview with Andreas, we went on to discuss how sacrifices would have to be made for a more sustainable future in the Netherlands generally.

> *Andreas: And we really need some more… We should pay more for our food, their green products. If not, the sector will decrease really hard.*
>
> *Annie: And there has to be an acceptance that something has to… give?*
>
> *Andreas: yeah. That will help, because if you keep spending your energy fighting the problems of today, you don't have enough time to face the problem of tomorrow. And I really think that's an issue.*

In some negotiations, an ideal scenario for all is not possible. In the example that Andreas is describing, it is about the style of farming and the price of food. This goes against the ideals of the *waterschap*, especially on the importance placed on obtaining an inclusive consensus. Cuppen (2018) describes how in some cases of energy transitions, conflict itself can be productive, rather than something to merely work through and 'get over'. She describes how stakeholders are often invited to participate as part of the planning process, which can be a means of anticipating a social conflict in a way that is more demonstrative than instrumental. She argues that instead of attempting to avoid social conflict, policy makers should pay attention to it, alongside admitting failures; this can strengthen trust in future decision-making processes. People who involve themselves in policy planning through getting into conflict are "self-organised participants" (Cuppen, 2018: 29), which Cuppen argues is more powerful than

invited participants, because they must have high motivational levels. Conflicts allow policymakers to see contention and engagement outside of "formal arenas and institutionalised democratic procedures" (Cuppen, 2018: 29), can produce knowledge, and force practitioners to reckon with the fact that some outcomes will not please everyone. Cuppen says authorities should admit to this earlier in the consultation process, and then conflict can lead to "mutual trust, preservation of relationships, group identities and the building of institutional capacity" (2018: 30). Bringing this back to water, Fallon et al. (2021) argue that solutionscapes are a way through wicked water problems, and complexities in environmental governance of shared resources. The solutionscape asks stakeholders to map their desires and priorities, and places emphasis on mutual understanding, through which holistic and overlapping solutions can be presented, moving away from a preference for quick and easy fixes.

The circumstances of the polder model in the Groene Hart is different to that of the Wassenaar Agreement, so building trust is challenging yet vital (Schreuder, 2001). Alongside conflicting visions of sustainability, there are environmental limits on the demands that can be placed on the waterscape, which will be disappointing to some stakeholders. This is something that many interlocutors make clear, even while maintaining that an agreement is important to them. Instead of aiming for a 'poldering', policymakers could shift the emphasis to mutual understanding, admitting that disappointment is part of the process, as Cuppen (2018) emphasises.

The work of the polder model is further increased in light of how many stakeholders are involved in the Groene Hart, and therefore how many committees are at work in it. The western part of the Netherlands is one of the most densely populated areas of the world—the Randstad including the Groene Hart has the same population size and density as the San Francisco Bay Area (Cao and Priemus, 2007). One interlocutor said that the Groene Hart is like a "city park". Making sure all residents feel listened to and taken seriously is important, as the political ramifications of disagreement are pressing; with a turn to the right in national politics and the rise of populism, there is an erosion of political trust (van der Ploeg, 2020a). This environment breeds distrust of planning decisions. The number of planning committees both demonstrates and feeds into this. Just because it is difficult, however, does not mean that it is not worthwhile. The example of the polder model demonstrates that Dutch political systems have a long tradition of collaboration despite their differences, a tradition that remains important even as the polder model is less relevant (Schreuder, 2001).

We should also take into consideration multiple perspectives due to the broad range of the effects of industry in the Groene Hart. Emissions and pollution from agriculture and other industries in this area have a reach far beyond the small scrap of land of the Groene Hart, therefore, local residents (and voters) are not the only stakeholders affected.

One informant described to me how this influenced his voting decisions.

> *John: Back to the elections. You know, I am an old man, but I am young in spirit, I think. And I am in support of European co-operation, samenwerking, now there was a young party, Volt. I voted Volt… [If} there is a faction of Volt in the government so we can spend time together, work together to cooperate, in European countries because of problems [such] as climate change and immigration, and energy transition, we can only solve this problem together. One country alleen [only], it doesn't work…carbon [dioxide] can also not [be constrained by a] border*
>
> *Annie: Yes, exactly. The emissions won't stop just because it is a new country!*
>
> *John: Yeah! … You can't say you deal with your problems here and we'll deal with our problems there—no you are one country, you have to deal with it as one country, and that's the same [across] Europe! There's a border, but what is a border?*

John's testimony shows how people feel it is important to work together to build a more sustainable future. Climate effects spread without regard for borders; in the case of the Groene Hart's waterscape, effects of intensive farming do not stop at the boundaries of the fields, polluting the air, soil, and water. Protecting shared resources is important to interlocutors like John, and his political decisions reflect this by voting for a cross-nation political party which emphasises the need to collaborate on climate change. Held (2010) argues that issues such as climate change have effects too large to be tackled by single governments speaking on behalf of a range of stakeholders who are scattered over a large geographical area. Part of this cosmopolitanism embraced by parties such as Volt, he argues, is "cooperation with other states and non-state actors" (Held, 2010: 13). Beck argues that the scale of crises such as climate change means that there is a "civilisational community of fate… which overcomes the boundaries of… us and them" (2006: 7). This "crisis" may not be felt by everyone in the same way, however, and people still may have disagreements on how it should be handled. Sixty percent of Dutch people polled by the EIB (2022) said that environmental issues (either climate change or environmental degradation) were the biggest issues facing the country today. This is

a clear majority, but certainly not enough to "overcome the boundaries of… us and them" as Beck describes (2006: 7). Despite these cosmopolitan aspirations of collaboration, to assume the concern of the masses in sustainability is not a given. As we see in van der Ploeg's work, farmers are likely to be more concerned about their financial and cultural futures than the prospect of climate change (2020a). These cosmopolitan projects, whether it is John's voting for Volt or the work of Beck and Held on political change, speak more to people who have already established themselves as concerned about the environment than those who are sceptical about its place in policy.

This is problematic in the case of the Groene Hart, where identity is often place-based and highly territorialised (see Janssen et al., 2022). Perhaps emphasis on cross-country political parties mean that there is further alienation between otherwise co-operative stakeholders. Alternatively, as Cuppen (2018) discusses, this conflict could be productive, and could be used to 'disappoint' stakeholders who have unrealistic expectations for planetary limits. With the emphasis on big picture climate change, it can be increasingly difficult for people to see their place in climate policy, and so there should be a focus on the local as well as the global effects of climate change (in)action (Lehtonen et al, 2019).

Norgaard (2011) suggests that apathy and inaction in the face of climate change can be a response to not knowing enough about a topic, not caring about a topic, or knowing and feeling too much, while being paralysed in one's current position to do anything about it. In Norgaard's research, residents of a village in Norway were acutely aware of the possibilities and dangers of climate change, but seldom seemed to be 'doing' much about it or linking local processes of the weather and pollution to global emissions. There is clearly concern with the environment in the Groene Hart as the voluntary groups, changes to farming and tense discussions make clear. Still, many people cannot agree on a solution, making progress slow and often invisible. By using Norgaard's work, we can learn how to speak to people in a way that can make sustainable changes possible and make them care enough to act, but not so much that they feel overwhelmed in their position. This includes speaking to them about climate change in what she calls a 'nice way'— for example, encouraging appropriate levels of concern in conversation without invoking panic. She describes the need to "shift from an information deficit model to a focus on the importance of emotion, social context, political economy, and social interaction" (2011: 63).

In this section, I reflected on the history of the oft-cited polder model, and explained why it may not be the most suitable option for sustainability policy in the Groene Hart. Instead, I think that it may be better to focus on trust and an inclusive decision making-process, rather than all emphasis being on the results of that process. This is especially true because of the assemblage of the waterscape, which as Li (2007) refers to, has many stakeholders, a collection of experts at work, and many conflicting visions for the future. This creates the characteristics that I discussed in 1.2.5, which create challenging conditions for governance, such as rendering problems technical rather than social, removing politics and believing failure to be avoidable. Resolution is a huge challenge in this setting, and may not even be possible or even desirable as an aim for the waterschap. In the following section I reflect on this further, linking the decision-making process to stakeholder perspectives.

4.2 An inclusive decision-making process

An inclusive decision-making process is about building the perspectives of those who are frequently overlooked in policy decisions and subsequent future environmental changes (Díaz-Reviriego, Turnhout and Beck, 2019), in line with the *waterschap's* aims of inclusive policy making for the waterscape. Povinelli (2017) states that different people and their interactions with the environment have radically different levels of impact on the world. Often, the poorest people in society, and those furthest away from political power, have far lower carbon output compared with those who are closer to power and wealth (Gore, Alestig and Ratcliff, 2020). By including these people in climate-related policy-making, those who feel the effects of climate change most are able to be included in planning for it, as opposed to non-participatory planning models, where decisions are made on behalf of stakeholders with little consultation. Participatory planning is not a silver bullet, however, and we must be careful not to paper over inequalities using the banner of inclusion, inadvertently reproducing existing power structures (see Brandt, Josefsson and Spierenburg, 2018).

Beyond this, an inclusive decision-making process is also about making sure that those who *feel* left out of the narrative are brought back into the story. Although this can be frustrating, working against alienation and disillusionment with sustainability is vital for the health of the planet (Corner et al., 2017). Buys et al. (2014) discuss how those working in traditional agriculture have enormous potential for change in terms of output and environmental impact, but for this impact to be felt, they must feel included, respected, and understood throughout the decision process. As multiple interviewees expressed, the ‘story’ of how an individual's actions fit into sustainable futures is vital. Narratives are incredibly powerful ways for people to change

their opinion (Razavi, 2019), and through working ‘with the grain’, or along the lines of what people originally believe, people can be converted to thinking more sustainably (Climate Outreach, 2017). Information alone can be overwhelming for the people whose minds climate activists are trying to change, but by creating a coherent narrative, with multiple facts combining together and pointing towards solutions, talking points are strengthened (Gunster, 2018). Those who do not seem to ‘fit’ in the rural (or, for that matter, the standard sustainability) framework can be brought into the debate with suitable support[45].

Furthermore, high emotional stakes in this debate show how essential an inclusive decision-making process is. Historical links to the land are deeply personal, based in the family and long-standing community, and land owners make decisions in line with their personal ties (Holloway et al., 2021). The sheer amount of both funding and political pressure applied to agriculture in the Groene Hart also shows that people care deeply about its role as a territorialised space, preserving landscape and industry for further generations (Janssen et al., 2022). This should not be worked against but incorporated into future supportive movements in the water board. The different committees show how multifaceted this issue seems to people, in that they are part of one organisation for one function (e.g. protecting meadow birds), and a different for another (such as better dredging techniques).

If we look at how water is interpreted across groups—as a threat, as a potential biome, as a resource for careful use, we see the assemblages through which the essential nature of water appears, and how this forms the waterscape. Water is, as Bakker (2012) and Barnes and Alatout (2012) describe, many things at once. This, too, strengthens the need for an inclusive decision-making process; we must understand the variety of these assemblages to move forward with social solutions. In this context, the science of sustainability should be understood as another lens through which to view water, not *the* lens itself. Other people’s stories and considerations of water must be worked through with equal sincerity, for they matter as much. This position is highlighted by Littlejohn (2020), with his account of sea wall conflicts in Minamisanriku, in Northern Japan, where, following a tsunami, local authorities wanted to build stronger, higher seawalls, going against the wishes of local residents for whom views of the sea were vital for ceremonial and socioeconomic life. For example, if people were not in contact with the sea, then another tsunami could destroy the area, because it would not be possible to

[45] This is challenging when we consider the rural-urban divide, and how that erodes solidarity, as discussed in Section 3.1.2.

'sense the mood of the ocean'. In Littlejohn's account, the planners did not, literally and figuratively 'look at things from a human point of view'—diagrams were never shown from the ground level (Littlejohn describes the outrage when these are produced), and people's priorities were not taken into account. When stakeholders were consulted, plans were changed. In his analysis, Littlejohn (2020) discusses "ontological dissensus" (24); he describes how the perspectives of residents were unforeseen by planners due to differing ontologies, but nonetheless, became paramount to the discussion of sea walls. These differences in perspective are both political and politicised. The same is true for the waterscape in the Groene Hart, but rather than the ontological dissensus being between experts and residents, it is more diffuse and with many stakeholders holding contesting views at once[46]. Below is an account of conflict between neighbours over water usage.

In the context of the Groene Hart, Eva told me how her neighbour, who lives in a huge house with lots of land and high hedges, took issue with her one hot, dry summer. She said that she noticed the water was not flowing freely through her dikes, and though the water levels were low due to the weather, they were far lower than she would have expected. Initially, she went over to her neighbour's house and he denied that anything was wrong with the water supply, and that it was just unusually dry that year. She persisted and eventually he admitted that he was holding the water back in his channels so that he could 'keep a water feature'. Because of the way that the water flowed, there was very little she could do about it. This shows how the management of water resources is unique, and what Warshall (2001) calls a "hydro squabble". Since water flows, it is a natural resource that is different to others and must be treated differently. This builds on what Harvey (2001) calls into question, on the notion of scarcity in nature. He says that ideas of scarcity are based on capitalist modes of thinking, an idea that nature must serve certain social and economic ends, and a refusal to change how we engage with the planet. Scarcities are "created by human activity and managed by social organisation" (2001: 61), and by describing scarcity we are showing an inability to be creative with natural limits. The example that Harvey uses to demonstrate the dangers of a scarcity mindset is that of population limits, but the model fits with water conflicts too. If we are unwilling to think beyond the capitalist framework and change "the ends we have in mind and alter the social organisation of scarcity" (2001: 62), then a population/consumption change must occur. These by necessity are aimed at the "other" because we cannot imagine "us" being redundant (2001: 63). In this case, those

[46] An example of this is Kees, described in section 3.1, who floods fields "for the birds" while maintaining that the land cannot be radically changed, even in the name of further biodiversity.

without social or cultural capital, those "upstream", the "other"—these populations will be harmed by water stockpiling or manipulation. Harvey writes that "The non-elite invariably experience some form of political, economic and social repression" (2001: 63). As the climate crisis causes increasingly dry periods in the Netherlands (Geleen, 2022), shortages are of growing concern. The form of water being a resource that flows means that cooperation is particularly essential. Using the framework of productive disagreements that Cuppen (2018) explains, the interaction between Eva and her neighbour is very productive, even from the one-sided interaction that I had (since I only heard Eva's side of the story). It shows how water is, for one side, an essential part of growing food (as Eva uses water on her permaculture forest), and on the other, an aesthetic choice tool that he could restrict access to. Despite these two ideas being fundamentally in conflict with each other, if we use the lens of an assemblage, then Gerlak and Mukhtarov (2014) argue that different ways of knowing water can be complimentary.

There is room for debate on the waterscape, but beyond this, conclusions must be communicated clearly to stakeholders, and they must be able to place trust in the authorities conveying those conclusions. A study communication by TU Delft emphasises the need for a "stable and targeted innovation policy", in order to keep costs lower in an energy transition (Herder, 2022). This is a key part of the "trust" that Schreuder (2001) describes. Instability has always ruled farming, as there are bad harvests and good, but to be able to move forward and make changes for a more sustainable future, farming cannot remain in a permanent state of insecurity. Constant preoccupation with potential ruin is stressful and can lead to a frenzied turn to populism as people feel that experts have turned their backs on the population and are no longer in touch with 'the common man' (van der Ploeg, 2020a). When I asked Andreas, who works for the farmer's union LTO, whether farmers were future-focused, he said,

> *"No, no. Future is tomorrow. And maybe that's true because they have a lot of challenges ahead for tomorrow. But it's really hard for them to look further forward, so five years is quite a long period, and it should be further, it's really hard."*
>
> *Annie: Do you think that would be a way to bring the idea of what is going to happen in 20 years' time into a conversation, or is it just too much, I need to survive tomorrow…?*
>
> *Andreas: Yeah I think for a lot of people, a lot of farmers and a lot of people in agriculture that's a big issue, they don't have spare time, they don't have free space. They have to think about new challenges, [not old ones].*

When farmers are preoccupied with what they need to do to survive tomorrow, they are not thinking about years in advance. Andreas described how when they do think about the future, they are seemingly punished for this too. Below, he describes how a farmer is given new guidelines for new barns by policymakers who are unaware of the way that investments are made on the farm. Farmers' timelines (of decades-long investments, as well as the seasonal cycle) do not match with the way that politics and legislation work, on a four-year rotation.

Andreas: I think the sectors are changing and are greening too… So politics, politics and a lot of people in society are expecting the agriculture sector to move on faster. And I think that's one of the difficulties, for example when you build a new shed, and you build it [to last] for 30 years so if I built a shed two years ago, I have to pay my [mortgage] for 28 more years and then I'll [think] about building a new one. And it's not possible for a farmer to switch very fast. And I think that the politics, which switches every four years, the farmer who switches maybe, one time in 20 years he's very progressive, so to say. So there's a difficulty in speed, and I think if we'd have some time, we can match up, which way can they… it must be possible to match up because the ideas are not so different. It's in the time they will take to get there. I think that's the biggest challenge. So if we have some time, or maybe we can speed some more up.

Annie: Also not recognising that, for example, switching to being an organic farmer is actually a really long and expensive process, it's not just an attitude change.

Andreas: No, you can't do it with a snap of your fingers. Also this morning I was in a meeting on innovation in food. Let's say in our food sector, so it was not only on the producers, but also on the buyers and all the people in between. And there we had a little discussion, and I am [saying]... that most of the farmers are... really have a lot of challenges, … they have to beat. …They are not [taught] in an innovative culture, so… they don't have the best starting position.

And they have a lot of challenges ahead, and some of those challenges you can combine but some of them really are difficult to come by so you have to face them one by one.

For example, maybe it's possible for you to be a farmer and also be good for nature, so have some more birds in your fields, but if you want to make more money with your milk, that's a completely different challenge… People can focus only on a few things at the

same time, so that makes it really hard and that's, I think, one of things society or politics should be more open about. Which is the biggest challenge? Which is the challenge with the most priority? Which things do we want to fix first and which of the things can be… done later on?... We can have those priorities, then it will be easier for the farmers to decide okay now I focus on this task in three years I'll check out the next one, or something.

These extracts clearly show that farmers need time to plan, and this planning is reliant on agreeing on a limit and sticking to it. This builds on the point that Cuppen (2018) sets out. By giving farmers realistic, solid targets, and reassuring them that these will stay at a constant level over the next, say, 30 years (the lifespan of the barn in Andreas' example), there will be some people who are initially disappointed but at least can plan for the future, and this trust can then be built on, for future negotiations and policy proposals. Beyond barns, this is vital for waterscape management. By setting out clear objectives, people can adjust for rising water levels, for example, rather than blindly following the water board's more conservative, reactive model, which can give the false impression that farming can stay the way that it is, with all of the issues of subsidence and pollution that go with it.

4.3 Diversification strategies for existing farms

As Andreas described, different solutions are needed for the different issues facing farmers. Furthermore, in order to address the climate crisis, industry in the Groene Hart needs to be economically as well as environmentally sustainable (as described by Murphy and McDonagh, 2016). A solution to this crisis of environmental and economic 'lock-in' is to create business models that are outward- as well as inward-facing, catering to tourists and visitors instead of 'just' supplying food, for example. Two strategies for this are the creation of (eco)tourism ventures and care farms. The former offers visitor experiences for short stays on farms, and the latter is a social- or health-driven destination for a variety of people, whether that be residential stays for people experiencing burnout, or day visits for people with learning difficulties. These benefits and drawbacks are discussed further in the following sections.

4.3.1 The promise of (eco)tourism?

One solution to less intensive agriculture is to include tourism in a mixed-income business model. Ecotourism shapes the way that farmers and other land custodians interact with the waterscape, how they interact with other farmers, and how they are perceived by the wider community. It also has a profound effect on the waterscape, which in turn, affects identity and

interactions due to the place-based identity in the Groene Hart. In terms of watescape, using the land in a more tourist-oriented way means water levels can rise and farming does not have to be so intensive[47]. Despite this area of potential growth and sustainability, it is also fraught with problems, whether because the economic potential of ecotourism is overblown, social relations in rural areas unable to withstand the change, or the new skills required by farmers are too challenging for them to adapt to it.

Tourism (or ecotourism) is an oft-cited solution to the economic precarity that many farmers suffer in traditional agriculture (Stronza et al., 2019). According to the Dutch tourism office, over the corona pandemic there has been an increased demand for peaceful and nature-based holidays ("natuurlijke / rustige omgeving") (NBTC, 2021). However, there are limits to this and it is questionable how high the demand for countryside access is, especially for overnight trips, when almost 66% of Dutch people go abroad, compared to only 50% who take an overnight break within the country (CBS, 2019). The depression in flight numbers during 2020 was seen as promising for the future of domestic tourism, but passenger figures have risen as the pandemic has worn on (Schiphol.nl, 2022).

Ecotourism may not be seen by residents as a socially sustainable way out of financial difficulty for farmers. People in rural areas are used to a certain type of agricultural traffic; this is nothing compared to the numbers of people (and possibly cars) required to make a tourism-based business feasible. Tourist-based traffic also means visitors have different interactions with the land, and are potentially disrespectful of certain rules, for example, the importance of closing a gate when passing through it to stop any animals escaping, or keeping dogs on leads. This feeling of ‘threat’ is even more heightened when the two communities, urban and rural, are seen as polar opposites (see section 3.1.2). Eva described her neighbours’ anxiety about the changing nature of traffic to her permaculture forest, where she runs courses. She said that she was open to feedback on these changes in traffic and parking, which did not actually bother her neighbours as much as they initially thought it would, however, the initial resistance can be enough to make people opposed to change.

The transition to ecotourism can also be extremely financially challenging. The initial conversion can rely on heritage funding, or more likely a combination of funding efforts, as in Vicky’s case,

[47] The farmer does not need to have as many cows, for example, because they also are getting income from tourism.

using local heritage funds, money from selling grass and spreading manure, and EU subsidies for crops. However, negotiating multiple funding streams is a very particular skill, which is time intensive, and relies on knowledge networks that farmers may not have in their existing business or social circles. As part of the rural outreach that Vicky was motivated by, she attempted a seminar to support this transition, but even funding for this supportive issue was ultimately unsuccessful. This is a potential area of support for agencies engaging in rural issues and comes back to the concept of listening to multiple perspectives and giving in depth, appropriate support on that basis.

Another issue is whether farmers even want to do this, since customer-focused interaction is quite different from the usual work of farming. As Kees described to me, "Working with people is very different. It can be nice, but it is not as nice as farming." He liked meeting people, "We have people from all over the world, and all different jobs, and that is interesting", but missed feeling stretched and not using the expertise that he had built up over years of farming. As he said, "With farming, you are never an expert. There is always more to learn about the natural world." We cannot forget how much people care deeply about farming, and about the process of dealing with the land and animals that they take care of. Veens (2019) describes how for the farmers involved in her research, there is a deep, generational care in farming that meant farmers could not imagine doing anything else, out of loyalty to their family and to themselves.

Culturally, in rural communities, the work of tourist-focused farming is often not recognised as ‘true’ farming. Vicky described to me how "Now that I do this, I am not a real farmer. I call myself a sort of cultural farmer, but [people do not think I am a true farmer]". Even though she also grows and sells grass for other farmers, the more tourist-oriented work means that what Vicky is doing is not viewed as 'real' farming. Away from this, customer service is fraught with difficulty. Before beginning to host events and campers on her land, Vicky worked in events and hosting all over the world, but she still finds this work challenging. She told me that she "doesn't like that [she] can't control people", and I watched as she was visibly uncomfortable greeting two young men staying in one of her caravans. She said to me afterwards that she did not accept various groups staying in her accommodation, in an effort to try and preempt what she thought they might want to do there (as you can on airbnb and the other booking sites she uses). She says, for example, that she has stopped accepting bookings from people with 'German names', because she thought they were only in the Netherlands to smoke cannabis. Before meeting these two young men, she had stopped accepting bookings from lone men because "they want

to find a party, and there are no parties here! They will not like it, they will make noise." At this, she flung her arms wide, casting them around the open space. After we met her guests, she said, "Maybe now it is time to stop accepting people on airbnb. Maybe it's time to just use [a website based on local tourism]." She also said that despite being herself a smoker, she did not want guest smokers, because "then they want to play music or talk in the night, and this is a farming area! Fields are quiet places, and my neighbours wouldn't be happy if people are making noise. It is not what they are used to in the country fields area, and I don't want to make them angry."

As Vicky and Eva described to me, the conversion of spaces from agriculture to tourism can be unsettling for neighbouring people and for those undertaking it, so may be socially unsustainable in the waterscape. Those who have converted their income can struggle in this, as well as those who 'left' farming traditionally. As one informant said, "People really do not like change. Especially here." A more hybrid approach to income generation might be more fitting, but this too requires quite different skills and a lot of time and money.

When we consider these issues, it can seem questionable whether ecotourism is a solution for those who are looking to convert their land use into a more sustainable one. For those who want to raise the water level or make farming more sustainable, it can be a way to bring in different revenue streams or build on existing changes to the waterscape, though it is not a silver bullet in terms of solutions. One way that more tourism-based thinking could apply to sustainable agriculture is for farms to be used as a space for education, as is happening in the case of Land van Ons and Lies' permaculture garden. In this case, visitors can be part of spreading the word, even if not everyone is convinced of the value of this. I asked Frans if he thought that people would visit and walk around the area where the Land van Ons farm is, as we were doing. He said:

> *My proposal stands, in this land, because I feel I am an owner. But, er... it's very clear. This landscape cannot use a lot of [visitors]... It would disturb [the wildlife], it is too open, when you have a bos, a wood, you can have a lot of people in a wood. Here when there are just ten people walking... It looks very busy.*

John's concern here shows that ecotourism may not be the solution to the financial and environmental impacts of farming in the Groene Hart. While tourism may mean that people can

raise the water level on the land and celebrate the waterscape for all its aesthetic value, it requires careful planning and a lot of upheaval.

4.3.2 Care Farms

The prevalence of existing side-businesses means that farms can be primed to become tourist sites and initiatives such as care farms. Care farms are areas for people with significant challenges in their lives, whether that is drug addiction, burnout or learning difficulties (among many other things!), and offer "integration of clients into society, providing meaningful work leading to greater independence and social status, taking the clients' potentials as a starting point rather than their limitations" (Hassink, 2007: 22). Care farming in the Netherlands is mostly run by people who have small, family-run farms, to provide health and social care to the non-rural population. In the Netherlands, there are 614 care farms, of which 439 are grassland based (Hassink et al., 2020). According to Hassink et al. (2007), there is potential for care farms to promote community cohesion within rural areas, and between the urban and rural areas. They also describe how farming trends over the last 50 years have resulted in a system where there is more "food and fibre" (2007: 21) than ever before, but there has been a reduction in the social function of farming, namely the social role of recreation, education and care (ibid., 2007). There has also been a reduction in the number of people employed on small farms, with a conventional farm being run with an average 0.9 full time staff, compared to a care farm with 1.7 (Hassink et al., 2020). Hassink et al. (2020) also describe how care farms are a potential means for the reputation of farmers to be improved, an area which van der Ploeg (2020a) also emphasises. Farmers feel that the prevalence of agri-bashing (van der Ploeg, 2020a) is high in the Netherlands, as recent farmers' protests show (Gijs, 2022). Farms can also be opportunities for people to become concerned about issues of sustainability, promoting wellbeing, and regaining part of human culture that they argue has been lost since we moved to a more urbanised population (García-Llorente et al., 2018). They do highlight, however, that credibility is an issue with green-based care provision, and some of the skills needed to run a care farm are quite different from running a traditional farm.

It also seems to have a more solid customer base than tourist initiatives, with established networks of caregivers in the country (Hassink et al., 2020) to ensure that there are enough service users for the scheme to be feasible, and appropriate care to be given. The potential for landscape maintenance of this is huge and seems appropriate for the waterscape of the Groene

Hart, with such a large percentage of farms being grassland-based. There are already many care farms, with more being created all the time (with a 17% increase from 2005 to 2016 (ibid.).

The same issues stand with changing agricultural traffic, however. But both initiatives described above ease pressure on caretakers of land to farm intensely, and have potential to establish a more sustainable waterscape. This is because they can disrupt the need to be an intensive farmer, and could allow agricultural caretakers to be able to raise water levels and lower livestock numbers, for example. In the next section, I list other ways that farming can become more sustainable, ones that aren't as 'outward facing'[48].

4.4 Sustainable alternatives

While traditional farming is in crisis, and tourist numbers are questionable, the question of other ways to manage the waterscape without becoming a visitor-oriented experience stands. Initiatives such as community-owned farms and permaculture forests produce food, while having less of an impact on the environment than traditional agriculture. They can also involve the local community, harking back to the social role of the agricultural industry of the past, as Hassink et al. (2007) describe.

4.4.1 New types of agriculture and the reaction from the farming community

Following on from the discussion about people using agricultural land for tourism not ‘really’ being viewed as farmers, people who engage in alternative styles of agriculture are also often not deemed to be ‘true’ farmers. Eva, who runs the food forest, uses subsidy information to inform what she plants. Over the years, she has tried "hundreds" of plants. Not all of these have been successful and as we walk around her fields, she points out dried up collections of twigs, explaining, "We tried cranberries here, but they didn't work in the soil." She does not seem perturbed, seeing all this as a big experiment, looking at which plants work with the soil, with each other, and which harvests are popular with people who are "friends of the food forest" and pay 45 euros annually to support her work and take cuttings or food home.

I asked whether others thought she was a 'real farmer' and she said, "Haha! No, my neighbour (an intensive farmer) wouldn't think so." Later, with a gleam in her eye, she said, "But I think he might be starting to listen to me. I gave him some ideas for how he can be selling his onions, directly to customers (rather than through a supermarket distributor), and he has started to look

[48] That is, ones that don't rely on visitors for a major part of their business model.

at my grasses and say, “That’s interesting.” Conversations and negotiations they have had now that the forest has begun to take hold are more positive, she said, demonstrating that often, the fear of change is more potent than the change itself.

A different farming scheme, cited by van der Ploeg (2020a) as a possible solution to the financial (and environmental) difficulties associated with intensive farming in the Netherlands, is the Herenboeren initiative. In this, initial investments were needed by members and it was hoped that lots of local people would get involved. In the early stages, people were not willing to make this commitment, as Lin described. "They wanted to see if it would work—they were sceptical! They said, 'Oh, we will sit back and we will decide later', and by the time we had our first harvest, all of our spots were full! And so now there are maybe 40 local families on our waitlist, but [the list is full]." Turnover of members has been very slow, and local families will not get a chance to be involved for a while, Lin tells me, while sucking her teeth and throwing up her hands saying, "They should have had some confidence!"

This shows that there is a general lack of confidence and trust between local residents and new agricultural schemes, a significant hurdle, as trust is essential (Schroeder, 2001). It can, therefore, be seemingly impossible to make the changes needed for a more sustainable waterscape. A change in land use requires huge investment, in time and money; crowdsourcing knowledge and funds are a way to meet these demands, but this requires participation and trust, which as we see from Eva and Lin, can be difficult to obtain. Furthermore, the shared nature of water as a resource means that agreement from all in the area and the need to have confidence in a change of use (for example, for raising the water level). When land use is changed, there is a change in water level, as a lower level means heavier machinery, or raising the water level creates waterlogged land. As water flows, there has to be a cohesive view on this, and trust has a vital role to play—residents must believe in the project, in the ‘story’ as Kees described. For new projects to be successful, there must be an emphasis on the waterscape as a dynamic but essential thing.

4.4.2 Alternative land management

As was mentioned in the biodiversity section (3.2.3), some people believe that very little in the Netherlands is natural. For other areas in the Netherlands there is a far more integrative and sustainable waterscape policy, such as Oostvaardesplassen.

At the beginning of section 3.2.3, I quote Josien, who says, “Hardly anything in the Netherlands is natural anymore.” This is a sentiment expressed by people on many sides of the sustainability spectrum. Vera (2009) argues that citing sustainability in the “Persian carpet” of small agricultural plots will not cause a change in biodiversity, and that more radical policy is needed to combat the year-on-year reduction in biodiversity. At times, it is used as a reason people should not even try to strive for a more sustainable future, but at other times, it is used as a justification for more innovative land use strategies, such as Oostvaardersplassen. This is a national park that was created in the 1970s, in a project headed by biologist Frans Vera, which has had moments of huge controversy. Some of this is seemingly from the idea that we should be able to intervene with nature, with an outcry over thousands of animals starving in the winter of 2017/2018 (Barkham, 2018), which has resulted in annual cullings. This is not something that can be mapped directly onto the Groene Hart now, as the landscapes, though both flat and littered with little waterways, are incomparable. Even though it is a reclaimed sea, the flat land of Oostvaardersplassen has huge hulking bushes, tall grasses and wildflowers and feels ‘wild’. The water level is too high to walk in some areas, and in some directions all you can see is thickets of bushes or scrubland stretching out into the wilderness. This is so different to the Groene Hart, where there are always signs of civilisation, no matter which way you look: a town, farmhouse or motorway is always present. Often, perceptions of nature as wild can generate the image of it being untouched by human hands, but in Oostvaardersplassen, we see how wilderness can be created, even on reclaimed land (Schmeets, 2016). The area is not the unproductive land that critics call a nature reserve and large land mammals are culled just before winter every year. Similarly to Oostvaardersplassen, rewilding an area like the Groene Hart calls into question what wilderness is—if we understand wilderness as a place untouched by humanity, these human-created projects call the concept into question (Schmeets, 2016).

Theunissen (2019) describes how the project did not communicate the fluctuations of herbivore populations in the wild, causing a huge amount of uproar following various winter population declines, but particularly those in the winter of 2017-2018. The notion of nature as untouched relies on erroneous ideas about nature seeking to maintain an absolute equilibrium, which he writes was a narrative created by both Oostvardesplassen and people who were against the nature reserve (Theunissen, 2019). There are natural fluctuations in wildlife numbers, as there are ‘natural’ effects of human life. We forget the extent to which humans have impacted the planet, which, in the age of the Anthropocene, is huge. Public enthusiasm for these experiments is vital for their success, so for a change in land and water management in the Netherlands,

public understanding must be high. This is difficult, even with good communication methods and clear messaging to a concerned audience, as Norgaard (2011) demonstrates. One informant warned against the implementation of rewilding techniques in the Groene Hart, saying,, “Yes, you can rewild the area, but it will look terrible for 50 to 100 years! It will just be brambles!” This speaks to the same fear about things being ‘really’ natural, or irredeemably unnatural, and what would happen if people felt ‘let down’ by the rewilding of a natural area. Would it result in “failure”, as Theunissen writes? Or would it be more complicated, disappointing some and encouraging others?

In order for there to be a more sustainable future for the waterscape, significant changes are needed. These can both fit in with, and diverge from, established economic patterns. Vera's comments on the Persian carpet of small-scale changes not being enough for widespread environmental change are relevant in considerations of the future of the waterscape. At the moment, we see how many new initiatives are trying to make more sustainable changes, but without united, radical, imperfect changes, we are unlikely to see meaningful changes for the Groene Hart's waterscape, and planet's health more widely. This speaks to the assemblage of actors that Li (2007) highlights, where through the process of an assemblage of concern forming, issues in natural resource management can become depoliticised and rendered technical, as opposed to taking up political space within the community. Though Li emphasises her neutrality in all of this, it is hard to see a way through change in the assemblage in the case of this study without the re-politicising of the commons. Through my thesis, I hope to emphasise the importance of centering of water as a political common good in the Groene Hart.

4.4.3 Ecosystems services and land sparing

Another solution that fits in well with the waterscape of the Groene Hart is that of land sparing, which was mentioned by interlocutors in the discussion on farmers being paid for “ecosystem services”. Land sparing posits that land use is an area of sustainability transition that must be emphasised, and says that food production should be hyper-intensive and hyper-localised[49], in order to free up land for the creation of nature reserves (Fischer et al., 2014; Lamb et al., 2016). This is in contrast to land-sharing, which emphasises biodiversity within agricultural practice. Land-sparing advocates describe how land freed from food production could be tourist

[49] Such as in greenhouses or strip farms.

destinations, either as wilderness areas, or as cultural farming areas. The latter is an important dimension of land-sparing in the European context, due to the cultural and political importance of farming throughout Europe. Cultural farming would allow agricultural landscapes to be maintained, although the main 'product' would be the appearance of the area, rather than crops or animal agricultural products (Fischer et al., 2014; Paved Paradise, 2023). Subsidies would be administered in light of this, rather than output, and there would be support for farmers to de-intensify and encourage biodiversity, in line with Dutch policy to lower the number of farms (Washington Post, 2022). Supporters of this technique emphasise the tourist potential of the new wilderness and agricultural areas. There is debate on how much land must be 'spared' to fit in with the definition of land-sparing (Grass et al, 2021), although much literature agrees that there should be a combination of the two for effective habitat facilitation, and optimum carbon capture through healthy soil and plant use (Grass et al., 2019). What's more, land should be "spared" on the basis of its value as wilderness, vs its potential for high output (so if it is fertile agricultural soil, it should be a designated intensive farm, and if it has high biodiversity potential should be a wildlife reserve) (von Wehrden, 2014).

Land sparing and land sharing are two ends of a continuum of sustainable discourse (Grass et al., 2019), and it is likely that all sustainable land management fits within this spectrum (Karner et al., 2019). The land sparing framework could work within other sustainable land management schemes that I've mentioned in this thesis if the sustainable farms were acknowledged as sites of cultural heritage rather than solutions to the structural issue of sustainable food production. This is seen as a way to get around the deep cultural value of farming across Europe (Harvey, 2005; van Koppen, 2015). It would not satisfy everyone though—as I described in section 3.3, one farmer said

> *Farmers hate the word subsidies and to be subsidised.*

Indeed, "cultural inertia" seen by stakeholders by Karner et al. (2019) as a reason to not even try this in NL.This is a resistance that maps onto opinions held by many of my interlocutors, too. Messaging is vital—many interlocutors expressed enthusiasm at being paid for ecosystem services, which is largely the same thing. As much of my thesis emphasises, agriculture in the Netherlands is at a turning point, and this could be a way out of it. One interlocutor, Andreas, emphasised that literature on the Groene Hart does not adequately acknowledge the power of greenhouses in the area, nor pay attention to how hyper-intensive agriculture could happen in these greenhouses in the future.

This type of policy is ambitious and involves sweeping changes, but is something that interlocutors see as a solution to social conflict and environmental degradation. It has huge connotations for the waterscape, on a ground level. Higher-yield agricultural plots would have precision fertiliser and irrigation techniques, and may be on concrete foundations, as with vertical bell pepper farming in the documentary Paved Paradise (2023). This would necessitate a technical approach to water management, but can be a more closed system, lowering water loss (Lamb et al., 2016). As traditional farming areas are turned into either rewilding reserves or cultural farming sites, water levels could be raised and intensive water usage lowered, constituting a sustainable shift.

This approach still involves a high degree of social conflict, and often, land sharing can be more acceptable with longstanding farming communities (Grass et al., 2021). Land sparing can be a hard sell in the narrative of sustainable farming, despite calls for radical change among interlocutors. Grass et al. call for "well-connected landscape mosaics" (2021: 285) which attempt to meet diverse needs of stakeholders, politicians and the general public. Crespin and Simonetti (2019) argue that conflict resolution should be the aim of much of conservations' work, and that coexistence is only possible with consensus. He argues that currently, stakeholders and the natural world are "co-occurring" rather than "coexisting", but I believe that this is a short sighted consideration of how the natural world, including human beings, exist alongside each other. The coexistence of different species in challenging late-capitalist conditions is vital to acknowledge throughout the climate crisis (Tsing, 2015). Instead of this sole focus on conflict resolution, conflict should be accepted and building trust (Schreuder, 2001; Cuppen, 2018). To say coexistence is only possible when conflict is resolved is short-sighted, and forgets that coexistence already exists, in a conflict-filled situation!

4.5 Starting out, and support from other authorities

Emphasising the need for more research, Jacco, a councillor from Alphen aan den Rijn said:

> *I think we need to analyse and think more about the dilemmas [with] nature and the weidevogels* [meadow birds] *and really try to see where we can develop these new projects, alongside sustainable agriculture and how can we make the existing more traditional agriculture more sustainable? But I think these are the main challenges for now, in the long run. I think there will be… even less cattle… Bio-based economies can be one of the possibilities. For example we can use… Reeds that can be used as building material. We want to build more biobased as well. For example... Hydrogen*

production for energy can also be biobased, so that can be some other possibilities as well. The challenge is that the ideas are great, but to realise them of course is another thing. And that will be the main challenge, to move forward and see concrete results in the coming years.

When I asked which some governance structures he thought could make this feasible, he said:

More from the neighbourhood, so less issue-based, and more location based. I think that helps to involve more people, but of course it's still a challenge, for how to… get a budget in the right place, and also it's not you ask and we do it, we need to set our goals [together]. That's important, so that we involve people but that we reach [our] goals.

As I described previously, for farms to transition from traditional intensive agriculture to tourism, there is lots of awareness needed about different funding models. This is true also for new types of agriculture. Though some follow a model where they 'chase' subsidies, most do not, and in order to be aware of the patchwork of funding options available, people need time, or a lot of capital, to make these initiatives take off. Eva is retired and already had the land. She had organising and fundraising knowledge from her past life so was able to negotiate finding and maintaining volunteers, as well as having a subscription model. In the case of Vicky, she inherited the farm mortgage free, so was able to take significant risks, and knew how to run events from past roles. These are forms of knowledge (and privilege) that underlie success in enterprises more sustainable for the waterscape. This knowledge is something that the water board will have to work *with* (when the stakeholder has this knowledge), and, in the case of its absence, accommodate for.

Conclusion

The overlapping conflicts of the Groene Hart makes creating inclusive water policy incredibly challenging. Throughout this study, I aimed to show how stakeholder views differ considerably, but are all underpinned with a deep concern for the landscape, and for its future[50]. I argued throughout that though water is often neglected in discussions of the future of the area, the Groene Hart remains a waterscape, and when prompted, interlocutors would emphasise the importance of water. The area forms an assemblage, with stakeholders brought together through mutual concern for the Groene Hart to form an intricate web of concerns, anxieties and future visions, a web that houses both considerable overlap and divergence. Within this context, any possible solutions will form a solutionscape (see Fallon et al., 2021), with building trust and anticipating disappointment being key features of strategy.

The Groene Hart is a waterscape because of the physical threats that water plays on the area, as informants emphasised. Without constant, careful intervention from the waterschap, the area would be uninhabitable, the landscape radically different. Effective infrastructure renders water invisible to most people, apart from at times of contention (Warshall, 2001). Eva's conflict with her neighbour over pumping water out of *sloten* shows how conflicts can be social and small-scale, but have deep impact in people's daily lives. Policy decisions that please everyone is impossible, especially when they are unaware of difficulties in water management. Strang (2004), Karpouzoglou and Vij (2017) and Swyngedouw (1999) describe how entwined water and society are, which I would argue is especially the case in a place like the Groene Hart. When we consider how present water is in the imagined landscape, we see how vital bringing emphasis to the waterscape is.

As I have considered throughout this thesis, water is essential for the Groene Hart's industries, social life and biodiversity, and through interactions with soil and peat, forms the landscape. Water is a commons, shared by everyone, but is highly dependent on context for its value (or lack thereof) in society (Beilin, 2018). Through engineering, a particular reality has been constructed—one of Dutch mastery of water, where stakeholders can afford to think of water as something to be managed rather than something to live alongside (Büscher, 2019). My

[50] Though I had two main 'groups' of interlocutors (traditional farmers and those interested in sustainability), these are not absolute categories. People slip in and out of categories—those who are interested in sustainability may also be invested in helping traditional farming continue, despite how seemingly contradictory this is.

interlocutors have a complex relationship with water—it is a nuisance and it is essential, in different quantities, depending on wider context. Though it is often less visible in readings of landscape, if attention was brought to it in interviews, interlocutors had lots to say on it. The "hydrosocial relations" (Flamino et al, 2022: 18) in the Groene Hart may not always be obvious, but are meaningful.

Managing the commons, as *Rijnland waterschap* does with water in the Groene Hart, especially with sustainability as the aim, is highly contentious, and effective governance relies on taking into account some of the beliefs of stakeholders. This conflict exists within very specific place-making discourses. Depending on identity, occupation and political affiliations (among other factors!), people have different perceptions of landscape (Strang, 1997). In the Groene Hart, conflicts are experienced as personal interactions, as well as more bureaucratic clashes with political and environmental groups. My research shows a portrait of neighbours finding issues with neighbours, community groups petitioning against developments, and different experts with alternative worldviews clashing. Rurality creates strong social ties (Kelly and Lobao, 2019), and when compounded with an occupation that creates strong ties to landscape[51], deeply felt landscape values spill over into social conflict. Change is difficult, especially in this context, and the climate crisis necessitates change—for sustainability to be tenable in this social environment, policy-makers must be mindful of place-making.

The setting of conflict in the Groene Hart that is so contentious and has so many stakeholders means that Li's (2007) characterisation of the assemblage is useful to understand difficulty in governance. She writes that in a community forest management setting, there are six generic features that make governing the assemblage difficult. Her research area of forest management bears similarity to Rijnland *waterschap's* management of the Groene Hart, in that they both describe natural resource management by varied stakeholders. Her six features are forging alignments, rendering technical, authorisation of knowledge, treatment of failure and contradiction, anti-politics, and reassembling. I'll explain these and apply them to the Groene Hart waterscape in the next section.

Her first characteristic points out that assemblages forge alignments between stakeholders at various levels, as we see with how water management and concerns with landscape link every

[51] Farming is an industry that results in particularly strong ties to landscape, and is particularly emotional (Holloway et al, 2021).

informant in this thesis with each other, with me over the course of my research, and with the *waterschap* more widely. This links stakeholders such as traditional farmers and people concerned with sustainability, as they both vie to control water in a way that supports their aims, despite core disagreements in understanding the area.

The second principle, that of rendering technical, is seen in how conflict is often seen as a series of technical constraints, rather than of social and cultural norms (Li, 2007). We see this with debate on how water levels should be set, and how it is a conflict marked by social tensions, but often considered a question of how engineering can fit around agricultural expectations. These expectations are set by identity and cultural and economic norms, with farmers feeling bound by their obligation to the land and the community to be as productive as possible, thus driving down water levels. Land use issues are often dissolved into issues of subsidence and physical possibility of lower land, without considering how people relate to the land depending on their profession, as Holloway et al. (2021) describe. This attempts to flatten the social and political dimensions of debates.

Following concerns of land use debates being rendered technical comes Li's characteristic of authorised knowledge (2007). This is the third principle, and is when only certain people are seen as true authorities on issues, which in the Groene Hart concerns land use and water levels. Often in this context, non-farmers, or those who are not seen as being too "urban" are shut down in conflict, showing that identity and social interpretations of others are vital in understanding how conflicts unfold. For others, including those concerned with sustainability, the only knowledge that matters is hard science, especially when discussing climate change. Identity, and deep emotional ties to the land also affect how people engage with conflict in the Groene Hart, making compromise difficult and rendering the solutions-focus of the polder model impractical. Many stakeholders move in and out of markers of identity, while other categories of identity, such as that of being a 'farmer', are dependent on peer acceptance. That is to say that identity, especially when relating to profession, is porous, and negotiated socially, making setting water levels and creating inclusive policy challenging. Identity creates specific placemaking practices, which in turn dictates a stakeholders imagination of the future. This also means that it is important for conflict around sustainability policy to be seen as socially-negotiated, rather than a series of technical considerations.

Her fourth condition concerns how failure and contradiction are treated. The complex situation of the assemblage means failure of governance and contradiction in opinion is inherent, but these difficulties are often seen as problematic, as something superficial and able to be worked around. The sheer number of variables, and the fervour with which the conflict is argued in the Groene Hart assemblage means that a solutions-based conflict resolution system is not realistic or desirable. Instead, I believe that the *waterschap* should look to work on building trust and continuing relationships with stakeholders, instead of focussing on resolution of conflict. This process will engage more stakeholders, at various levels of interaction (Schreuder, 2001; Cuppen, 2018), and admits that some (if not all!) stakeholders will end the process disappointed, in some way. It also highlights that disagreement is an important aspect of participation, rather than trying to focus on points of agreement between stakeholders. This is essential given the situation, or "turning point" that the Groene Hart finds itself in, especially when it comes to things like water, which must be maintained at a certain level, practically, and will necessarily be a disappointing process for some. I hope that my study adds to this data on how recentering social aspects of debate and accepting contradiction can be vital for more effective conflict mediation. The treatment of failure and contradiction forms one of the cornerstones of my thesis.

Her fifth characteristic is the process of anti-politics, wherein the political is purposefully left out of the governing of the assemblage (or where stakeholders attempt to exclude it). We see this in the Groene Hart with the resistance to involving party politics in issues of both sustainability and traditional farming, and how the political system is not thought to be part of the solution to the "crisis point" that farming is in. Court rulings on nitrogen emissions forced the government back into the debate, and they ruled to lower the number of farms (among other reforms), to huge amounts of backlash. Widening representation in the elected portion of the waterboard also brings party politics back into the assemblage, but it is an incredibly uneasy relationship. This exclusion of politics is worrying, as van der Ploeg (2020a) describes, because if politics is not brought into the conversation on the future of farming, then this void will be capitalised on by the populist hard right in future elections. Distrust of traditional institutions only accelerates the popularity of populism, which serves as a warning to the future.

The final characteristic of the assemblage is reassembling, wherein key terms and characteristics of the assemblage shift and change, even as stakeholders assert that it is fixed. This is present in the Groene Hart with the intensification of traditional farming that John argued

has changed the agricultural landscape, while other traditional farmers argue that farming has stayed largely the same. Informants describe how the Groene Hart has "10 committees for every square metres", and stakeholders form a "patchwork of power". Another informant described how people often feel torn between the aims of different agencies who work within the Groene Hart. As I described in both chapters 3 and 4, conflicts and solutions form patchworks and tapestries, and sustainable landscape management tactics follow this. This is compounded by the fact that so many agencies function in the Groene Hart to serve both traditional and sustainable agricultural ends, with stakeholders often involved in both sides.

Woven throughout these characteristics is the decentering of the social, which means that conflicting visions for the Groene Hart are seen as something able to be resolved with technical reasoning and compromise. Though these are tempting to focus on when negotiating with the assemblage, as Li describes in her fourth condition, they can be less effective compared with other tactics, such as emphasising trust. This forms the foundation of my argument. Trust and social readings of conflict should be emphasised in part because of the nature of the conflict, and how much views of the landscape differ. Views are conflicted about what the land should be used for, and the form that intervention should take, as well as how possible and desirable agreement is. People are divided on how the land should look, what is economically viable and should be economically prioritised. In these considerations, water is often rendered invisible. While other aspects of environmental disagreements are central (nitrogen especially) in consultations on water levels and spatial planning, considerations of water sustainability is low on the list of priorities of many stakeholders in the Groene Hart. This is partly because of the effectiveness of *waterschap* infrastructure, but water is also forgotten as a shared resource, and can be hoarded or campaigned against by those who forget that everyone uses it.

In light of the aims of the waterboard, and of this research, conflict can be made more productive by emphasising trust, and the points of agreement between stakeholders. Trust is vital for the engagement that the waterschap wants to emphasise, as well as open dialogue where disagreement is accepted and encouraged, as a key part of the negotiation process. My data shows that though there is significant disagreement between stakeholders, all of them care deeply about the land- and waterscape, and so all interaction with them should bear this in mind. Information and science education in the future should also bear in mind the difficult position of farmers, economically and socially, because this is something that all stakeholders agreed on. Many people do agree that farming should exist in the future, but disagree on the

form that this should take. Many held points of disagreement with the way that both the government and EU funding works[52], as well as the many different agencies that land caretakers must be in contact with to make their occupations viable. Conflict can be productively navigated through allowing disagreements and agreements to exist side-by-side along consultation processes, and by speaking to stakeholders from where they are, as opposed to imposing frameworks of agreement as the aim of all negotiation. Solutions can then form a "solutionscape", which focuses on many partial and imperfect solutions for different aspects of a problem (many of which are often social), rather than a technical solution that purports to fix everything (Fallon et al, 2021).

The Groene Hart's waterscape forms an assemblage, which as we see from Li's (2007) work, can be incredibly difficult to govern. The conflict in the Groene Hart forms a complex web of difficulties that are treacherous for the *waterschap* to navigate. There is debate over water levels, the 'naturalness' of the landscape (and whether a natural landscape is even desirable), nitrogen levels and livestock numbers. The debates are held up by conflicting ideas of identity, such as who is and isn't a farmer, and who has the authority to speak for the area. The issues are made urgent by the financial situation of farmers and other caretakers of the landscape. Despite underpinning land use, water is often treated as an inconvenience, a technical problem with easy solutions. The desperation of peoples' situations, both as environmentalists and as farmers, means that there is often no clear solution visible. Instead, working towards a solutionscape, with focus on building trust and accepting disappointment treated as key parts of the process, is best. The assemblage often attracts technical solutions and obscures human conflict and politics, despite trade-offs created by technical solutions being inherently political. In the Groene Hart, there is hunger for solutions for an ongoing social crisis, but much of the discourse surrounding the crisis and solutions ignores its social nature. By using anthropological perspectives, we can highlight how important these human conflicts are, and open the door for discussion and expanding on trust. Because it is vital that we build trust in the absolute possibility of a sustainable future for the waterscape.

[52] As seen in the belief that only certain people can speak for the countryside and rural issues.

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INCLUSIVE SUSTAINABLE WATER POLICY IN A CONTENTIOUS WATERSCAPE .

AN INSIGHT INTO THE GROENE HART

KEY QUESTIONS .

- How can water be placed more centrally in sustainability debates?
- How can the *waterschap* create sustainability for populations that have such radically different views of landscape?
- Why is environmental governance so difficult in the Groene Hart? How can an assemblage framework facilitate governance in an area with many stakeholders?
- How can the *waterschap* build trust with stakeholders, and facilitate discourse between stakeholders?

BACKGROUND .

The Groene Hart is a relatively sparsely populated area in the middle of the Randstad. It is home to many industries, professions, small cities and towns, but agriculture looms large in stakeholder imaginations. The majority of farms in the Groene Hart are traditional, intensive farms, although the number of sustainable and innovative farms is growing, with different ramifications for water policy.

My research primarily concerns agricultural practitioners, a small slice of stakeholders in the Groene Hart. These interlocutors moved in and out of the classification of 'traditional' or 'sustainable' and had different space-making practices—though they inhabit the same area, they value different things, and have different (often conflicting) visions for the future. I also spoke with people involved in land use and water policy. All of the people that I spoke to were highly interested in issues of sustainability, even if they were less interested in water management, which I tackle with key issue one.

The stakes are high for all involved- the growing noise of the global climate crisis plays on the minds of those involved, as well as the national-level crises of nitrogen, farm continuation and livestock numbers. These issues converge and build on each other to form a complex web of something to be grappled with. All of my informants agreed that agriculture in the Netherlands is at a "crisis point", and that change was necessary in the next few years. This is the case on multiple fronts- economically, socially and environmentally. The political ramifications of failures of trust are high, with populism and conspiracy theorists gaining ground in rural (as well as urban!) areas[1].

[1] Seen in the 2023 local elections, wherein populist right-wing pro-farmer party BBB were the biggest party overall (de Joode and Mouissie, 2023).

KEY ISSUES EXPLORED .

Prioritising water: reframing the area as a waterscape

Throughout my interviews, I found that people could easily forget the importance of water in the Groene Hart. This is partly because of the effectiveness of infrastructure and how quickly the waterboard can mitigate environmental disaster. When it came to online debate, water was also quickly forgotten as a consideration of sustainability, perhaps because of the more publicised debates on nitrogen, biodiversity and land use. In order to ensure that water takes a central role in the imagination of stakeholders, and to acknowledge the area should be reframed as a waterscape. This can be established in the *waterschap's* communication with its constituents—in posters, letters and online campaigns.

Creating location-specific sustainability policy when stakeholders hold radically different views

People view the landscape and waterscape differently depending on their place-making processes - these are shaped by identity, occupation, economic situation and politics, among others. People do not fit into single categories easily, and these categories are not absolute, nor permanent. But how people view (and imagine) the landscape has huge ramifications for what they consider tenable in sustainability policy, and consultation processes should keep this in mind. Establishing categories of interest groups might be an interesting research framework, and while the *waterschap* should seek to include these groups, they should be mindful of how people do not fit into simple categories. Education and justification for different decisions should be published by the *waterschap*- if a more sustainable decision is made, especially in a controversial (often agricultural) area, the reasons behind this decision should be published to stakeholders as an opportunity for education. Discussion should be able to continue after the decision making process formally ends.

Governing the assemblage is a distinct thing

As I detailed over the course of my research, the number and variety of stakeholders and agencies at work in the Groene Hart means that it forms an assemblage, which has specific difficulties for governance. Social disagreements should be embraced—Li (2007) can act as a guide for what is often avoided in the assemblage of environmental governance, and therefore how to embrace difficulty. Some of these tactics include: allowing for disagreements and not seeing "failure" as that, allowing party politics to be present in debate. This could be through promoting education and hosting mediated

discussion where the aim is not resolution, but open discussion, with stakeholders' allegiances named and accepted.

Embracing conflict is key

As an extension to acknowledging the assemblage is the fact that embracing conflict is a key part of environmental governance, especially in a place as socially complicated as the Groene Hart. Through embracing conflict, the waterboard can instead focus on building trust with constituents, and allow constituents to build trust with each other (Cuppen, 2018). This can be done through town hall meetings, and by giving more time to the water level negotiation process detailed in section 3.2 of my thesis. The elected portion of the water board should meet more often, and have more of a transparent negotiation process, to make stakeholder engagement an easier process for those interested. This would allow the *waterschap* to be seen as a trusted, guiding institution, and could mean it takes more authority in advising for sustainable water policy.

CONCLUSION .

By focusing on productive disagreements, and facilitating debate, the *waterschap* can encourage discussion between stakeholders, and establish itself as more trustworthy. This will lead to a greater level of understanding between different stakeholders in the assemblage. Some concrete actions that can aid with this include extending the discussion periods around the setting of water levels and plugging more resources into them to avoid the delays in level-setting that that *waterschap* staff described. Further qualitative and quantitative research into stakeholder needs could be conducted, including to those typically uninvested in the consultation process. Further extending the roles of those in the elected portion of the water board. Mediated discussions with no aim of resolution

If people feel excluded from political discourse, the ramifications can be disastrous. In local elections in 2023, right-wing populist party BBB swept the polls. The *waterschap* must encourage inclusion of all stakeholders, even if their opinions seem ridiculous--disaffection breeds a turn to right-wing populism and conspiracy theorists (van der Ploeg, 2020; Castanho Silva et al, 2017). This can be tackled through education, open dialogue, and an approachable *water board* who are responsive to the enquiries of their

constituents. There is a warning, however, against the water board becoming 'just another agency'. In order to create lasting, consequential change, there must be significant investments in long-term plans along the lines of wanting to truly understand the needs of constituents, educating on sustainable policy, and promoting lasting dialogue without the need to rush for compromising decisions.

KEY RECOMMENDATIONS .

- Emphasise the role of the waterscape in communication with stakeholders
- Reform the water level negotiation process, preventing backlog and allowing consultation at more regular intervals in the year
- Discussion should be a core focus of education and consultation. Resolution should be abandoned as a metric of success, instead focussing on trust.
- Allow conflict to be a key part of stakeholder interaction
- Increased investment in stakeholder inclusion, for long-ranging projects that account for (and encourage!) long periods of debate

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