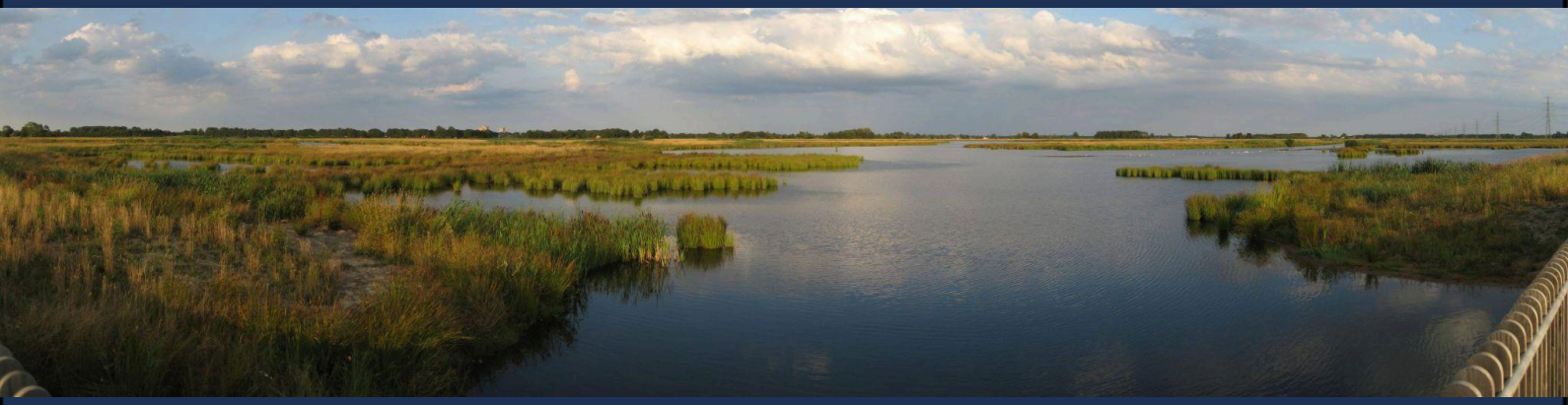
Riverhood

along the Eelder- and Peizerdiep Rivers:



Towards New Narratives for Entanglements of Nature and Society

Casper Max Klooster
Research Master Spatial Sciences
Individual Research Training

In collaboration with:
Natuur en Milieufederatie Drenthe
Stichting Natuurbelang De Onlanden

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Samenvatting

De regio Kop van Drenthe, Nederland, wordt geconfronteerd met toenemende uitdagingen op het gebied van waterbeheer, waaronder intensiverende droogte, vervuiling, dalende grondwaterstanden, ecologische degradatie en groeiende druk op de drinkwatervoorziening. Hoewel recente hermeanderingsprojecten, ingestelde natuurgebieden, waterretentiegebieden en regelgevende kaders langs het Eelder- en Peizerdiep-systeem hebben geleid tot incrementele ecologische verbeteringen, blijven de bestaande benaderingen overwegend technocratisch en door de overheid gestuurd. Deze benaderingen zijn mogelijk niet toereikend om de volledige complexiteit van de ruimtelijk-maatschappelijke uitdagingen in de regio aan te pakken. Deze studie verkent de voorwaarden waaronder alternatieve, op waterrechtvaardigheid gerichte narratieven kunnen ontstaan als oplossingsrichtingen die verder gaan dan technologie en overheid, als aanvulling op bestaande aanpakken en narratieven. Uitgaande van het Riverhood-kader (Boelens et al., 2023), een politiek-ecologische lens gestructureerd rond waterjustitiebewegingen en de verstrengeling van natuur en samenleving, onderzoekt deze studie hoe sociaal-ecologische en governance-condities het ontstaan van Riverhood-narratieven mogelijk maken of belemmeren. Er zijn vier semi-gestructureerde diepte-interviews afgenomen met overheids- en maatschappelijke actoren die betrokken zijn bij de beleidsvorming op het gebied van water in de regio. De analyse onthult een mogelijk patroon, gestructureerd rond vier denkkaders: Regulerings-, Overheids-, Technologie- en Utilitair Natuurdenken, die elk fungeren als barrière en alternatieve narratieven kunnen diskwalificeren. De bevindingen suggereren dat het waterbeheer in de regio gericht is op een status quo die de relationele, collectief onderhandelde narratieven verdringt, die een Riverhood-perspectief juist als noodzakelijk beschouwt. Dit artikel biedt een eerste verkenning en een basis voor toekomstig onderzoek naar de wijze waarop op Riverhood gerichte narratieven gemobiliseerd kunnen worden om een breder publiek en alternatieve waarden te betrekken bij beleidsvorming en uitvoering.

Abstract

The Kop van Drenthe region, the Netherlands, faces accelerating water management challenges, including intensifying drought, pollution, declining groundwater tables, ecosystem degradation, and growing pressure on drinking water supply. While recent river remeandering projects, established nature reserves, water retention plains, and regulatory frameworks have produced incremental ecological gains along the Eelder- and Peizerdiep river system, existing approaches remain predominantly technocratic and government-centric, and may be insufficient to address the full complexity of the region's social-environmental problems. This paper explores the conditions under which alternative, water-justice-oriented narratives might emerge to constitute beyond-technology and beyond-government solution pathways to complex socio-environmental problems, complementing established approaches and narratives. Drawing on the Riverhood framework (Boelens et al., 2023), a political ecology lens structured around water justice movements and entanglements of nature and society, this exploratory study asks how socio-environmental and governance conditions enable or obstruct the emergence of Riverhood narratives. Four semi-structured in-depth interviews were conducted with governmental and civil society actors involved in water policy formulation in the region. Analysis reveals a pattern structured around four types of thinking: Regulation-, Government-, Technology-, and Utilitarian Nature-Thinking, each functioning as a barrier that disqualifies alternative narratives. The findings suggest that water management in the region remains oriented around a status quo that crowds out the relational, collectively negotiated narratives a Riverhood perspective would consider necessary. This paper offers a first diagnostic exploration and a foundation for future research into how Riverhood-oriented narratives might be mobilised to include broader publics currently excluded from governance arrangements.

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1. Introduction

"If we see nature as an ally, and we give her the space to be healthy on a system-level, we will find the solutions to the challenges of climate, food, and wellbeing." Here, in the landscape vision 'De Schone Schil', Foundation Nature Interest De Onlanden (NDO) (2025; p. 13) sketches a vision for a narrative of alliance to nature in the context of water management of the systems that interconnect the nature reserve and floodplain 'De Onlanden' (Figures 1.1, 1.2 and 1.3) to the downstream lying Lauwersmeer (Figure 1.2) and upstream through the river and brook systems of 'De Kop van Drenthe' to the nature reserve and raised bog Fochteloërveen (Figures 1.2 and 1.3). In this paper, I will refer to the river and brook system of the Eelder- and Peizerdiep rivers that interconnect the Fochteloërveen to De Onlanden as the Peizerdiep system (Figure 1.4), and to the region that includes the two nature reserves and the Peizerdiep system as De Kop van Drenthe (Figure 1.3), for clarity and consistency. The opening quote of this paper concisely encapsulates the orientation of this research endeavour, as it emphasises the role of perceptions of nature in addressing water management challenges in social-environmental problems.

Figure 1.1

Map of the nature reserve and water retention area De Onlanden. Modified from Foundation Nature Interest De Onlanden (2025).

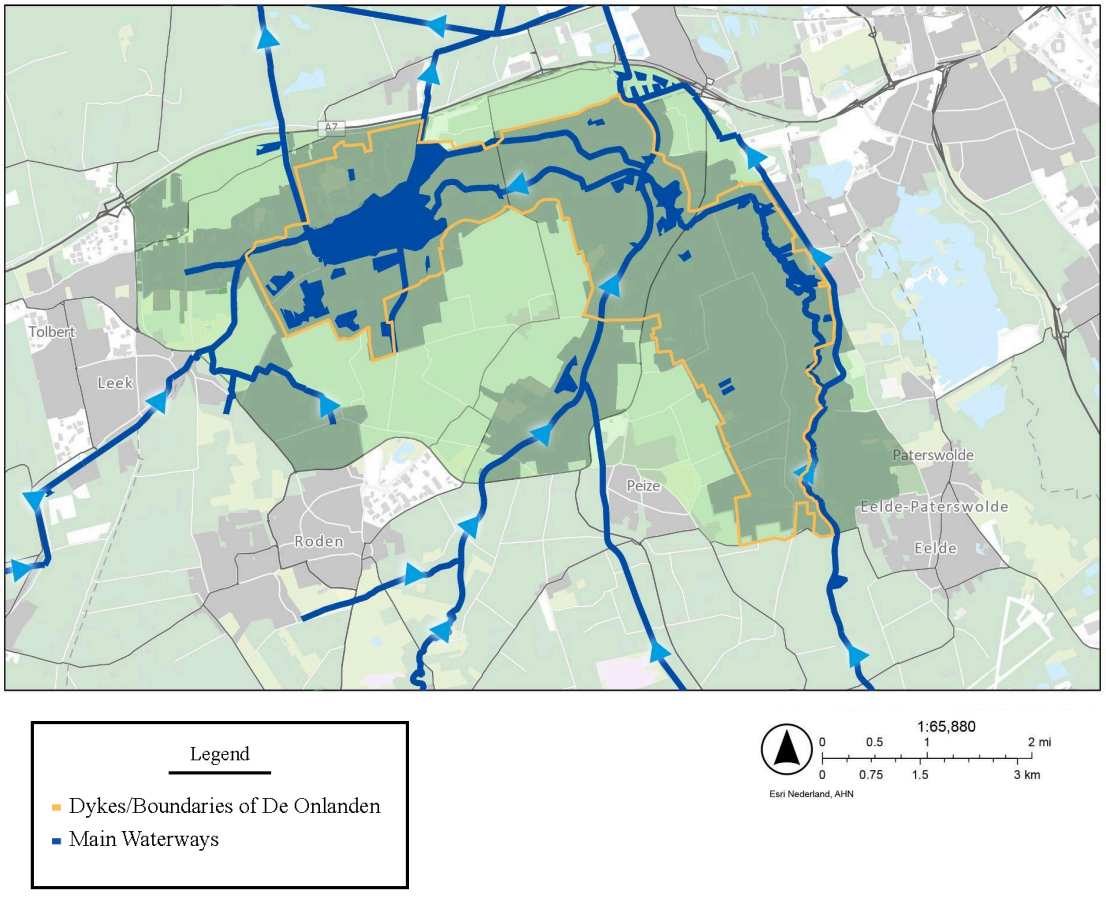


Figure 1.2

Map of the North-Eastern Netherlands, its main waterways, and the approximate locations of De Onlanden and the Fochteloërveen. Modified from Schipper et al. (2024).

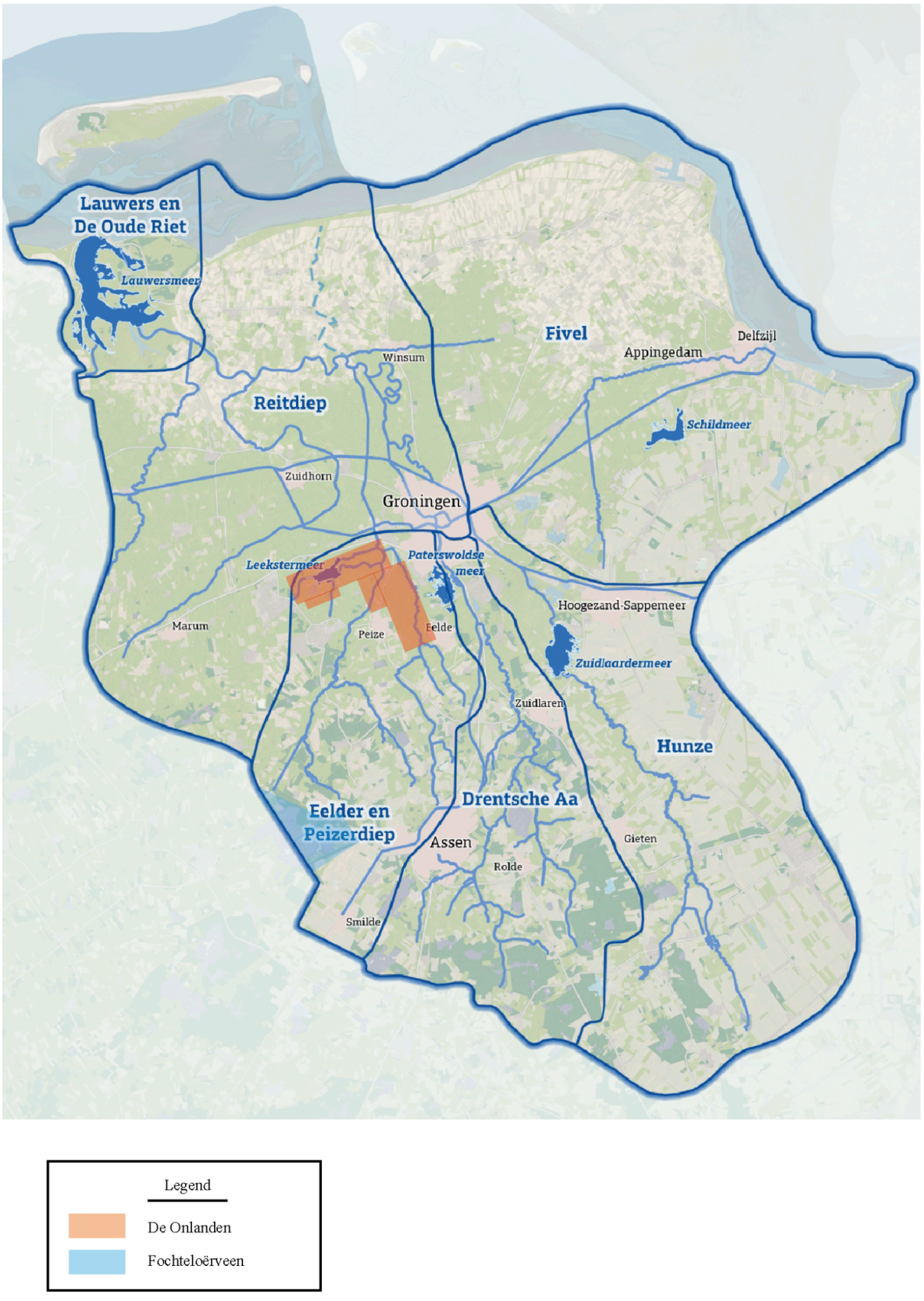


Figure 1.3

Map of the Kop van Drenthe and the approximate locations of De Onlanden and the Fochteloërveen. Modified from Schipper et al. (2024).

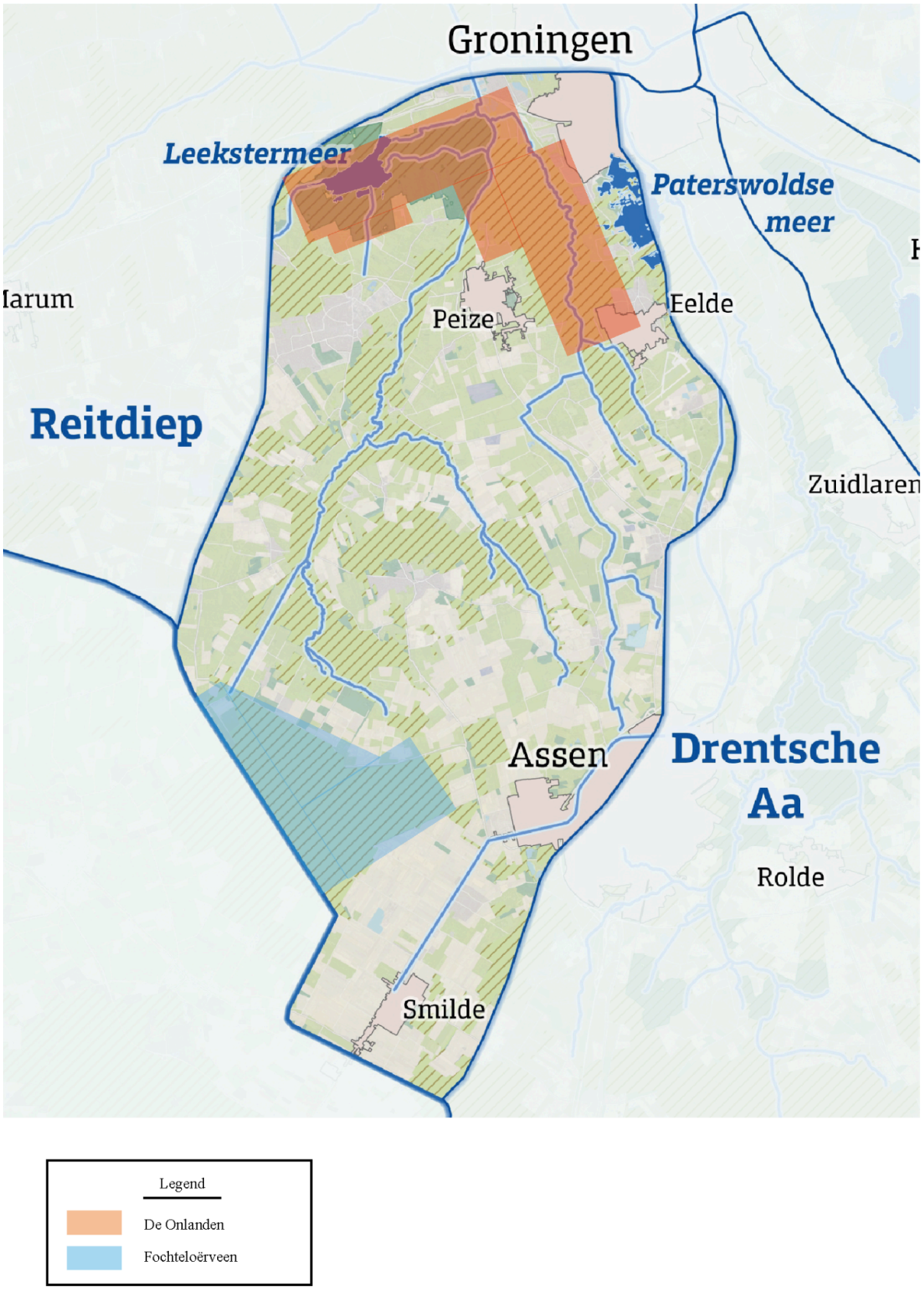
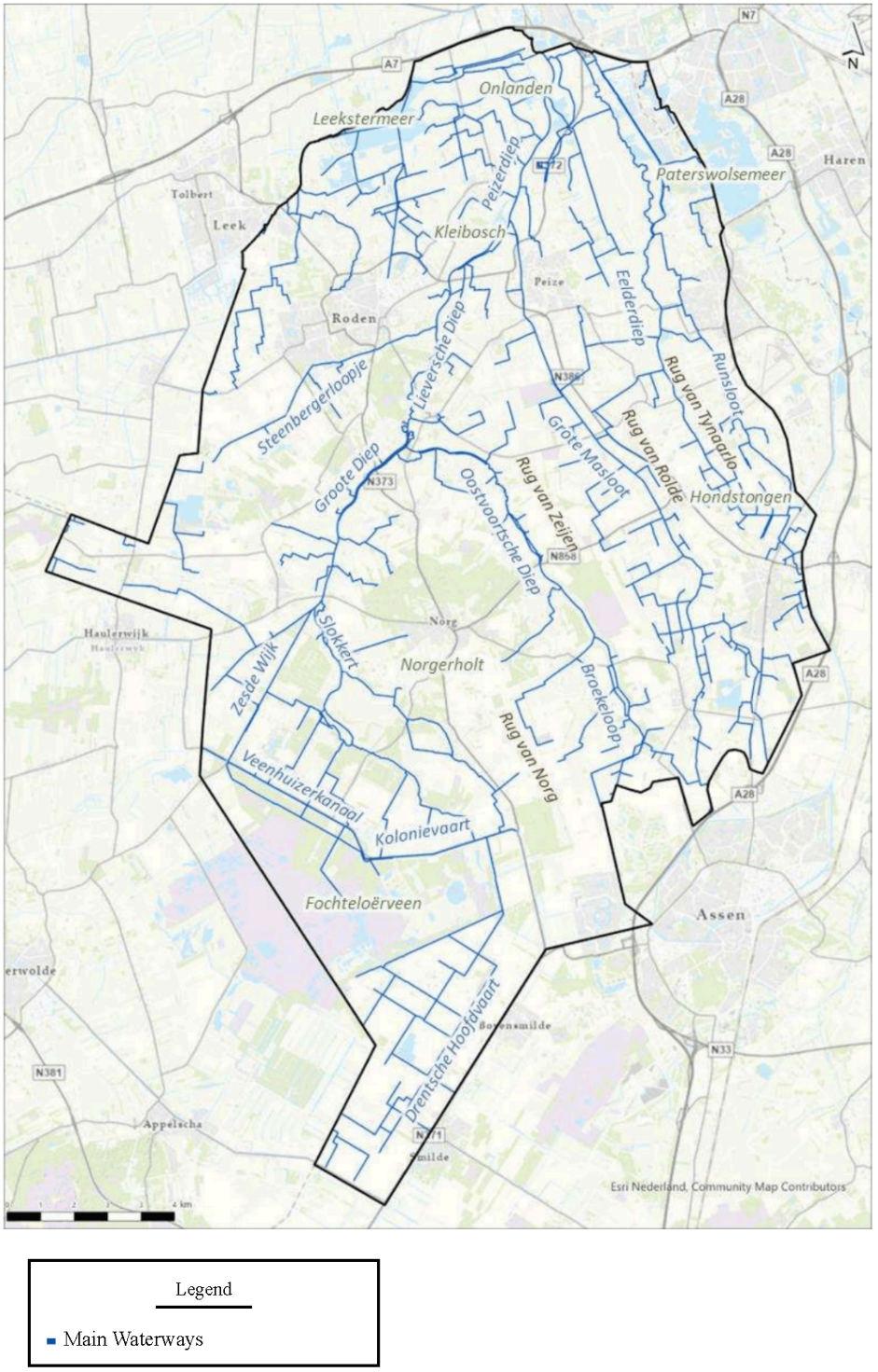


Figure 1.4

Map of the Kop van Drenthe main rivers and brooks of the Peizerdiep System. Appendix F shows a detailed schematic of the Peizerdiep system. Modified from HaskoningDHV (2023).



1.1 Social-environmental problems in the Kop van Drenthe.

The material uncertainties and disagreements relating to causes, processes, and outcomes of regional materialisations of climate change (Castán Broto, 2017; Provincie Drenthe, 2021a; 2021b; 2021c; NMF Drenthe, 2025; Planbureau voor de Leefomgeving, 2026), as well as the disputes related to the urgency, objectives and desirable approaches to regional climate mitigation and adaptation (NMF Drenthe, 2025), position climate change-related water management challenges in the Kop van Drenthe as a complex system planning issue (De Roo & Silva, 2010). In concrete terms, a recent publication of the PBL Netherlands Environmental Assessment Agency (Planbureau voor de Leefomgeving, 2026) underlines five high-confidence risk factors directly related to water management:

(**1**) *Increase in drought frequency;* due to increasing summer precipitation deficits and stagnating winter precipitation surplus in the Kop van Drenthe (Deltares, 2026). (**2**) *Dehydration of sensitive precipitation- and seepage-dependent ecosystems;* particularly pertaining to the raised bog ecosystems (Fochteloërveen; Zeven Blokken) and lowland peat marsh ecosystems (De Onlanden) (Deltares, 2026; p. 15). (**3**) *Groundwater table decline;* especially summer groundwater levels and particularly in sandy soils, which span a significant portion of the Kop van Drenthe and function mostly as agricultural land (Waterschap Noorderzijlvest, 2024; p. 47; Deltares, 2026; p. 15), which has been and is likely to continue to result in drought stress impacts on crops and nature, driving agricultural producers to irrigate, and the waterboard to import IJsselmeer freshwater (Informatiehuis Water, z.d.; Ministerie van Infrastructuur en Waterstaat, 2021; Rijkswaterstaat, 2017; Schipper et al., 2024). Given the constraints and competition for the IJsselmeer freshwater, and the priority regions that deal with more extreme precipitation deficits and drought projections (e.g., Achterhoek; Brabant; Limburg) (Informatiehuis Water, z.d; Ministerie van Infrastructuur en Waterstaat, 2021; WMD, 2022), the regional waterboard and the regional drinking water company anticipate demand to outrun the allocation of IJsselmeer freshwater in drought periods to Drenthe in the coming decades if current trends of regional and national demand persevere (Ministerie van Infrastructuur en Waterstaat, 2021; Waterschap Noorderzijlvest, 2024; 2025; Waterschap Vechtstromen, 2019; p. 21; WMD, 2022).
(**4**) *Groundwater and surface-water contaminant concentrations;* will increase due to precipitation and lateral water-supply deficits (Ministerie van Infrastructuur en Waterstaat, 2021; WMD, 2022). Persistent pollutants, such as nutrients from arable land runoff, will become further concentrated as available water volumes decline. (**5**) *Drinking water pressure;* in line with the decline in groundwater level, due to precipitation deficits and increasing domestic, industrial, and agricultural freshwater demand, the pressure on drinking water supply in the Kop van Drenthe will increase (Deltares, 2026; p. 15; Schipper et al., 2024; Noorderzijlvest, 2024; 2025; WMD, 2022).

1.2 Complexity and New Narratives of Water Management

The main water management challenges in the Kop van Drenthe, as listed above as a non-exhaustive collection meant to illustrate, not confine, consist of complex global dynamics involving interacting climate change causes, processes, outcomes, and societal discourse on mitigation and adaptation. These dynamics, in turn, interact with their local materialisations, both in physical and societal terms (De Roo, 2010). Given that many components that constitute these social-environmental problems are rooted in complex webs of interrelated actors and networks (Box 1), in both physical, economic, social, and institutional senses (De Boer & Zuidema, 2015; Horlings et al., 2020; Meadowcroft, 2009), we are not only limited in our capacity to fully oversee and grasp such a complex web, ownership and power are fragmented, limiting the capacity of any single actor to alter them (De Boer & Zuidema 2015). The fragmentation of ownership and power in the context of the Kop van Drenthe refers to the decline of the state's exclusive power in environmental planning since the 1960s (Mol,

2015). As international organisations gained influence, global markets gained prominence, and societal norms and values shifted, environmental planning increasingly moved beyond the nation-state container as the sole frame of authority (Jordan et al., 2005; Mol, 2015; Zuidema, 2017). Drawing from Zuidema (2017) and De Roo (2010), in circumstances characterised by uncertainty (climate change causes, processes, outcomes), disagreement throughout complex networks of actors (societal discourse regarding climate change, mitigation, and adaptation), and fragmented ownership and power (influence of global market actors, societal actors, and international actors), it is valuable to explore the potential of alternative methods for organising approaches that include groups beyond government in decision-making processes and sharing of responsibility, in solving social-environmental problems.

Box 1.

Complex webs of interrelated actors and networks: Lily cultivation in the Kop van Drenthe.

Lily cultivation in the Kop van Drenthe illustrates how local water management challenges are embedded in webs of actors and dynamics that stretch far beyond the region. A lily producer operates within intersecting pressures: global market competition and fluctuating consumer demand shape what is economically viable, while access to land, water, and capital determines what is practically possible. Environmental regulations impose constraints on pesticide and fertiliser use, yet enforcement and compliance interact with the economic realities facing individual producers. Meanwhile, the intensive water demands and significant reliance on pesticides in lily cultivation place pressure on local groundwater tables and contaminate surface and groundwater, contributing to the water management challenges the region faces, raising concerns among local communities. No single actor controls this web. The producer responds to signals shaped by international market dynamics. Local and regional governments set and enforce environmental standards, but within frameworks determined at the national and European levels. Societal actors raise concerns, but their influence on production practices may be indirect and diffuse. The result is a situation in which the causes of water management problems are distributed across scales and sectors, ownership of those problems is fragmented, and the capacity of any single actor, including government, to alter the trajectory is structurally limited.

There is extensive literature theorising the effectiveness of different governance configurations (i.e., the different ways in which decision-making power, responsibilities, and actor relationships can be structured and arranged to address a problem) and approaches to complex social-environmental problems, which points to the potential for durable solutions to lie in new methods rather than traditional state-exclusive modes of organising cooperation across different groups (Jordan, 2008; de Roo, 2010; Zuidema, 2017). Thinking of water management as a domain that includes, but can extend beyond government across the complex web of actors and networks, is a prerequisite for the mobilisation and self-organisation of these actors to engage in water management (Boelens et al., 2023; 2025a; 2025b). Such a perception of beyond-state-coordination is not confined to a single ideology or interest. Rather, it can emerge through a wide range of internal (individual; subjective) and external (societal; intersubjective) perceptions and negotiations about what defines the problem, what a desirable future looks like, and how to get there (Boelens et al., 2025b: p. 427). The external, societal, and intersubjective components that play a role in the emergence of perceptions of beyond government-thinking perceptions thus spread, grow, and reform through interactions among individuals and groups. Hence, the ‘instrument’ of expression and ‘object’ of negotiation can be referred to as the narratives that convey perceptions. Narratives of water management beyond government-thinking can emerge from a wide range of perceptions, belief systems, and interests (e.g., rooted in neoliberal, anarchist, or postmodern critiques of state-centric intervention). As a key enabler,

new narratives hold the potential to break away from established meanings, values, discourses, and the status quo that reinforce current trajectories of social-environmental change (emphasised by IPCC AR6 WGIII in Shukla et al. (2022; p. 572)). Given that current trajectories are projected to lead to groundwater table decline, loss of ecosystems, drinking water shortages and further contamination of surface and groundwater in the Kop van Drenthe (Ministerie van Infrastructuur en Waterstaat, 2021; Planbureau voor de Leefomgeving, 2026; Waterschap Noorderzijlvest, 2024; 2025; Waterschap Vechtstromen, 2019; p. 21; WMD, 2022), exploring alternative narratives to regional water management holds the potential to provide complementary solutions to these complex regional water management challenges (NDO, 2025; NMF Drenthe, 2025).

1.3 Introducing Riverhood

NDO proposes thinking of nature as an ally. For the purpose of exploring alternative narratives that acknowledge both the physical complexities of the water system and climate change impacts, as well as societal dynamics; what components would such a narrative of alliance require, in order to contribute to breaking away from the status quo of water management and provide solutions to our list of social-environmental problems (Chapter 1.1)? A narrative of alliance with nature would, in principle, require moving beyond utilitarian perceptions of ecosystems and towards an acknowledgement of the entanglements of society and nature (Boelens et al., 2023; 2025a; 2025b).
Boelens et al. (2023) argue that genuine forms of alliance cannot exist between an object of extraction and its dominator; such alliances depend on a foundational degree of equality. Specifically, narratives of social-natural alliance should involve a recognition of these entanglements in relation to water justice, ensuring that water, and decisions about water, are managed in ways that are fair to all people, communities, and ecosystems involved (Hommes et al., 2023). Water justice, in the context of social-natural alliance, refers to the narrative that asks who gets how much water, who gets to decide, whose perceptions and culture are respected, and whether nature itself is protected in the process. This implies that water justice means fair access, fair decision-making, cultural recognition, and ecological integrity, all at once (Boelens et al., 2023; 2025a; 2025b; Hommes et al., 2023).

The literature on Riverhood (Appendix C) illuminates a particular approach to water justice, one that serves as an analytical lens for investigating perspectives and narratives, as well as the tensions between dominant and alternative ones, in the context of water management, environmental planning, and the complex entanglements of nature and society. In the context of the Kop van Drenthe, its social-environmental problems, and the projected potential for new narratives to contribute to solving them, it is worth exploring what the Riverhood lens can offer. Specifically, what does the current state, the status quo, of water management reveal, and what openings and barriers does it create for alternative perspectives and narratives oriented to water justice, to take hold and contribute to solving social-environmental problems along the Eelder- and Peizerdiep system?

1.3 Research Question

The Riverhood framework, as touched upon in Chapter 1.2, offers both an analytical lens and a more normative emphasis of what established and dominant utilitarian, technocratic, and government-centric orientations tend to disqualify and crowd out. The question for the Kop van Drenthe is not only whether alternative narratives exist, but also under what conditions they can emerge, take hold, and begin to contribute to addressing the social-environmental complexities, entanglements, and challenges. Therefore, at the request of the Nature and Environment Federation Drenthe (NMF Drenthe) and NDO, I aim to provide a first exploration and subsequent illustration of the social, ecological, and institutional conditions under which Riverhood narratives might exist and

emerge along the Eelder- and Peizerdiep rivers. This product is intended to serve as a foundational pillar for future investigations into the emergence and existence of alternative and new narratives in the context of water management in the Kop van Drenthe. Two research questions guide my investigation. The first concerns the social and ecological conditions themselves, whereas the second turns to the role of institutional conditions, with governments as a key actor in the materialisation of those conditions.

RQ1:

How do social-environmental and governance conditions enable the emergence of Riverhood narratives along the Eelder- and Peizerdiep system?

RQ2:

How do governmental bodies create openings and barriers to the social-environmental and governance conditions that enable Riverhood narratives along the Eelder- and Peizerdiep system?

In this report, I approach these questions through 3 exploratory components. First, Chapter 2 explores existing orientations to water management in the Kop van Drenthe, as presented in research and evident in the grey literature. Second, Chapter 3 explores the Riverhood literature and presents a theoretical framework that provides an analytical lens rooted in Riverhood principles. Chapter 4 presents the methodology guiding the empirical component of this research; semi-structured interviews with key governmental and societal actors involved in water management along the Eelder- and Peizerdiep rivers. Chapter 5 then applies this methodology, constituting the third exploratory component, using the interviews to develop an understanding of the social-environmental and governance conditions that enable, or obstruct, the emergence of Riverhood narratives in the region. Finally, Chapter 6 draws the findings together into a broader reflection on their implications for the prospect of Riverhood narratives emerging along the Eelder- and Peizerdiep system.

2. Water Management in the Kop van Drenthe

During the 20th century, water management in the Peizerdiep system, both in terms of governmental and private (i.e., agricultural producers) interventions, primarily involved draining the landscape to establish drier hydrological conditions suitable for intensive agricultural production (LAOS Landschapsarchitectuur, 2025). The guiding orientation of water management had been to maximise the extent of drained agricultural land, where drier conditions equated with greater production potential and yields, thereby enclosing the landscape within agro-capitalist logic (Boelens et al., 2023), reducing it to its economic potential, and treating water management as a productivist instrument for maximising agrarian intensification (LAOS Landschapsarchitectuur, 2025; Van Meeteren et al., 2023; Schipper et al., 2024). As a result of agricultural and drainage-oriented water management throughout much of the 20th century, the channels of the Peizerdiep system lie relatively wide and deep, and the drainage ditch network is expansive, thereby draining the surrounding stream valleys and damaging ecosystems (e.g., peat oxidation) (Arcadis, 2024; HaskoningDHV, 2023; Schipper et al., 2024). In addition, intensive agricultural practices have led to nutrient runoff and eutrophication, deteriorating both surface and groundwater quality (Arcadis, 2024; HaskoningDHV, 2023; Schipper et al., 2024).

Before 1990, environmental protection initiatives were fragmented and modest in scale; for example, the area now designated as the Natura 2000 site Norgerholt (26 ha) was transferred to a

nature management organisation in 1962, which remained fairly exceptional (Van Meeteren et al., 2023). Since 1990, the implementation of national legislation of the EHS (reformed as the NNN in 2013) and the establishment of the Natura 2000 network have driven restoration efforts in the degraded raised bog landscapes of the Smildervenen (parts of the Fochteloërveen and the Zeven Blokken remain semi-intact), partially recovering the water retention capacity lost since its systematic drainage and peat extraction over the last centuries (Braks, 1990; RIVM, 2002; Van Meeteren et al., 2023; Schipper et al., 2024).

More recently, the productivist orientation to water management in the Peizerdiep system, beyond national or international influence, was complemented by a more protective and integrative orientation following the high-water emergency in 1998 that threatened the South-western urban districts of Groningen bordering De Kop van Drenthe (Provincie Drenthe et al., 2014; Heitman et al., 2019). In response to the event and projected further increases in precipitation intensity and flood risks, efforts to identify suitable water-retention methods were initiated (LAOS Landschapsarchitectuur, 2025; Van Meeteren et al., 2023; Schipper et al., 2024).

2.1 Recent Measures

Given its low-lying, wet conditions, in the area of the De Onlanden, around 1600 hectares were bought and exchanged (‘verkaveld’), in addition to 600 hectares already available, and redeveloped to a combined water retention area and nature reserve in ownership of various nature management organisations (Heitman et al., 2019; Provincie Drenthe et al., 2014; Van Meeteren et al., 2023), for which, since 2024, a redevelopment has been initiated to expand its water retention capacity (Provincie Drenthe, 2024). Since 2000, The province has, in the face of water quality assessments requirements and standards under the EU Water Framework Directive (WFD), an obligation to conduct assessements and intervene in WFD standard-violating concentrations of contaminants (most notably including chloride, nickel, arsenic, cadmium, lead, phosphate, nitrates, and pesticides concentrations) (EU, 2000; Provincie Drenthe, 2021c). Furthermore, since the early 2010s, several water management interventions have focused on integrating flood risk reduction with strengthening biodiversity. For instance, the construction of a connecting channel with ‘nature-friendly banks’ between the Masloot and the Eelderdiep aims to promote biodiversity and reduce flood risk simultaneously. Since 2014, the province has initiated remeandering projects for sections of various lengths along the Oostervoortsche Diep, the Slokkert, the Groote Diep, the Lieverse Diep, and the Peizerdiep. Furthermore, the Broekenloop, Runsloot, and another section of the Peizerdiep are currently under redevelopment for remeandring, for which the project boundaries are visible in Figure 2.1 (Schipper et al., 2024; Heitman et al., 2019; Provincie Drenthe et al., 2014; Van Meeteren et al., 2023).

Remeandering, often combined with the implementation of nature-friendly banks and participatory instruments, has constituted a central, recurring instrument in the effort for water retention in the Peizerdiep system, due to its ability to enhance water retention, increase biodiversity, and strengthen the capacity of the landscape to filter contaminants (Schipper et al., 2024; Heitman et al., 2019; Provincie Drenthe et al., 2014; Van Meeteren et al., 2023). The latter refers to the self-purification capacity of slower-flowing, structurally complex (i.e., meandering), and biodiverse systems through a range of biogeochemical processes (e.g., phytoextraction/ stabilisation/ volatilisation, contaminant sorption, microbial degradation), thereby contributing to reductions in pollutant concentrations (McCarty et al., 2011).

Figure 2.1

Map of the Kop van Drenthe, its Natura2000 areas, existing/implemented nature, and NNN project areas as specified by the Province Drenthe. Modified from Noordwest-Drenthe (2023).

Given that the province functions as the competent regional authority, the coordination and much of the operational responsibility for responding to flood-risk projections, adhering to NNN, and Natura2000 biodiversity standards, and complying with WFD standards lie with the province. Remeandering has been embraced as an integral instrument that interlinks the three water management challenges in the Peizerdiep system (EU, 2000; Provincie Drenthe, 2021c; Schipper et al., 2024; Van Meeteren et al., 2023).

However, Schipper et al. (2023), NMF Groningen (2023), NMF Drenthe (2025), and NDO (2025) emphasise the incremental and fragmented nature of the application of policy instruments aiming to improve water retention, biodiversity, and water quality, by the province, municipalities and the waterboard in the Peizerdiep system. Moreover, in the incremental and fragmented nature of the remeandering projects, embankment restoration in Fochteloërveen, expansion of water retention capacity in De Onlanden, and government action to meet WFD targets, the authors identify key chokepoints. These would revolve around the failure of these efforts to account for or otherwise address, the complex, entangled nature of causes, processes and outcomes across water management interventions, cultural and symbolic linkages, economic interdependencies, and the material and ecological dynamics of rivers and brooks that altogether constitute the Peizerdiep system. In doing so, the overall approach ultimately risks the ability to steer current trajectories away from the projected groundwater table decline, ecosystem loss, drinking water shortages, and further contamination of surface and groundwater in the Kop van Drenthe.

3. Riverhood

3.1 The hydrocratic orientation.

Most established, dominant orientations in contemporary river management frame water primarily as a measurable resource, commodity, or hazard. While many advocate stakeholder participation, they remain wedded to expert-driven approaches that reduce complex society-nature interactions to biological parameters, economic metrics, or productivist natural resources (Boelens et al., 2023; 2025a; 2025b; Molle et al., 2009). To capture this tendency, Boelens et al. (2023) coin the term hydrocracy: the dominance of techno-managerial perspectives and narratives that natural resources to economic metrics, de-localise river governance, and impose uniform control. There exists a range of similar terms in the literature that describe more or less the same set of characteristics of water management orientations that Boelens et al. (2023) refer to as hydrocracy; e.g., “The hydraulic mission” (Molle et al., 2009), “Hydro-authoritarianism” (Spoor & Thiemann, 2025), “Engineering paradigm of hydraulic bureaucracies” (Vitale et al., 2025), etc.

Hydrocracies do not merely manage rivers; they actively shape what counts as legitimate knowledge about them. By treating water management instruments and technical knowledge as self-evident, necessary, and politically neutral tools, rather than as inherent carriers of values, power relations, and normative perceptions of social-environmental problems, the hydrocratic orientation can self-position as the only rational and desirable approach. This process systematically disqualifies alternative perceptions of the river and overlays them with expert models that present themselves as naturally and morally superior (Boelens et al., 2023; Giraldo-Martínez et al., 2025). In doing so, affected communities and ecosystems are rendered voiceless, and the river is reduced to an object of extraction and control (Boelens et al., 2025b; Giraldo-Martínez et al., 2025).

3.2 The hydrocratic lock-in.

Hydrocratic governance does not merely persist; it self-reinforces. Historical decisions, institutional legacies, and large-scale hydraulic investments create path dependencies that make departure from established patterns structurally difficult (Van Assche et al., 2024; Vitale et al., 2025). The scale and irreversibility of mega-hydraulic interventions add material weight to this lock-in, reinforcing the mechanisms that disqualify alternative orientations as described above, constituting a 'hydrocratic lock-in'. The result is a governance configuration that, while effective in contexts of broad agreement and limited uncertainty, systematically forecloses more integrated, place-based, and community-oriented approaches (Boelens et al., 2023; De Roo, 2003; Zuidema, 2017). This research, therefore, does not seek to replace hydrocratic governance entirely, but to identify the conditions under which alternative narratives can emerge alongside it, narratives capable of unlocking, or resisting, the self-reinforcing dynamics that entrench established approaches and may otherwise prevent meaningful responses to the socio-environmental challenges facing the Kop van Drenthe.

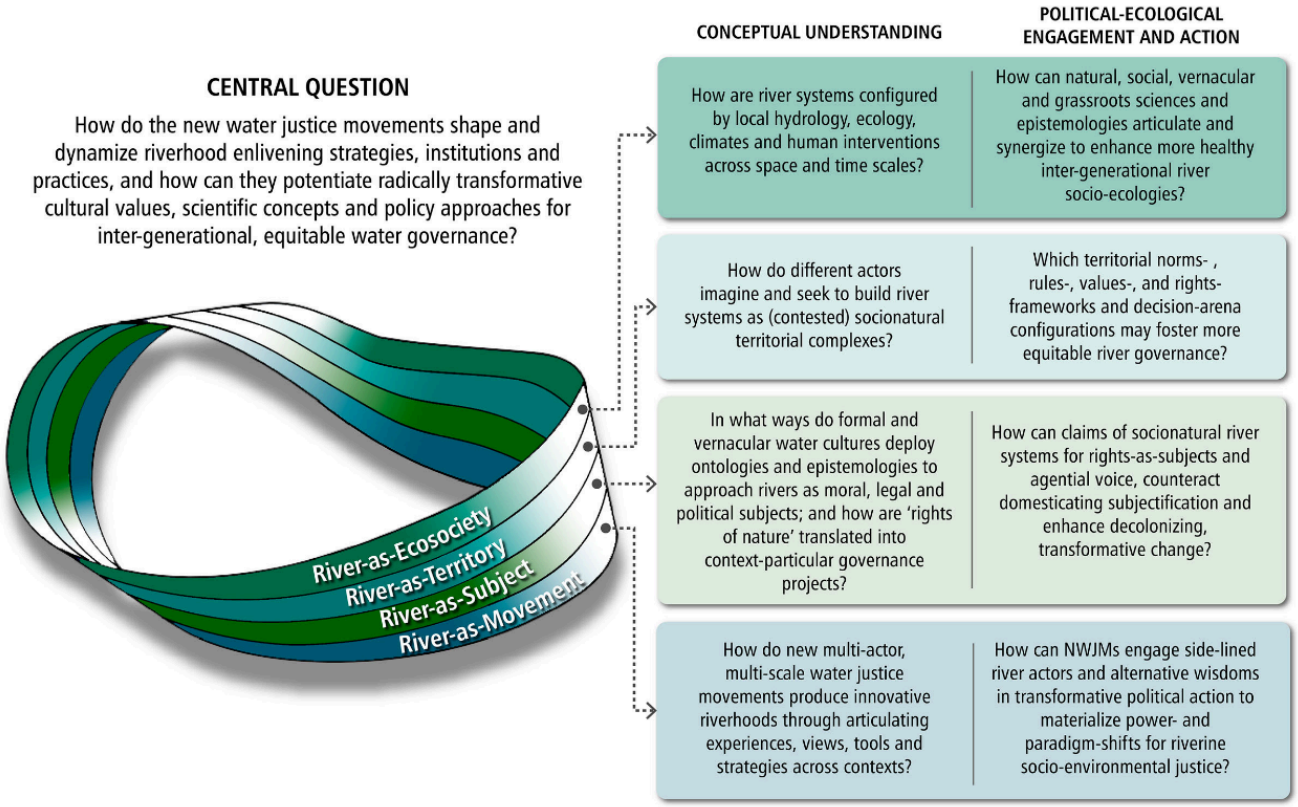
3.3 Riverhood: An Analytical Framework

To investigate those conditions, this research adopts the Riverhood framework developed by Boelens et al. (2023). Riverhood offers an analytical lens for evaluating the tensions between dominant hydrocratic narratives and alternative ones rooted in water justice, understood as fair access, fair decision-making, cultural recognition, and ecological integrity (Boelens et al., 2023; Hommes et al., 2023). The framework identifies four interwoven dimensions through which rivers are contested and reimagined, visualised as a Möbius strip to convey their continuous entanglement (Figure 3.1).

(**1**) *River as Ecosociety*; concerns the complex, dynamic interactions between river systems and the communities that inhabit them, interactions that hydrocratic approaches tend to flatten into biological or physical formulae. This dimension foregrounds the entanglements of society and nature, and the community knowledge and norms that develop in response to ecological change (Boelens et al., 2023). (**2**) *River as Territory;* concerns how rivers are governed as contested socionatural spaces. It evaluates and critiques how governance designs embed particular norms about how water should be distributed and who should control it, while presenting these arrangements as natural, necessary and inevitable. It asks whose territorial meanings, values, and rights systems are recognised, and whose are overwritten (Boelens et al., 2023). (**3**) *River as Subject;* concerns how the river itself is framed; as an object to be managed, or as an entity with its own rights and agential voice. It investigates how different actors, from formal institutions to grassroots movements, approach the river's moral and legal status, and what governance arrangements follow from treating the river as a subject rather than a resource (Boelens et al., 2023). (**4**) *River as Movement*; concerns how communities and collectives organise to contest hydrocratic narratives and construct alternatives. Because river domestication and reduction to economic metrics operate across scales, so too do the movements that resist them, forging cross-cultural, trans-scalar alliances among grassroots actors, academics, advocates, and ecologies to advance water justice (Boelens et al., 2023).

Figure 3.1

The Riverhood Framework: A Möbius Strip of Four Interwoven Riverhood Ontologies. Source: Boelens et al., 2023; p. 1145.



3.4 Operationalising Riverhood

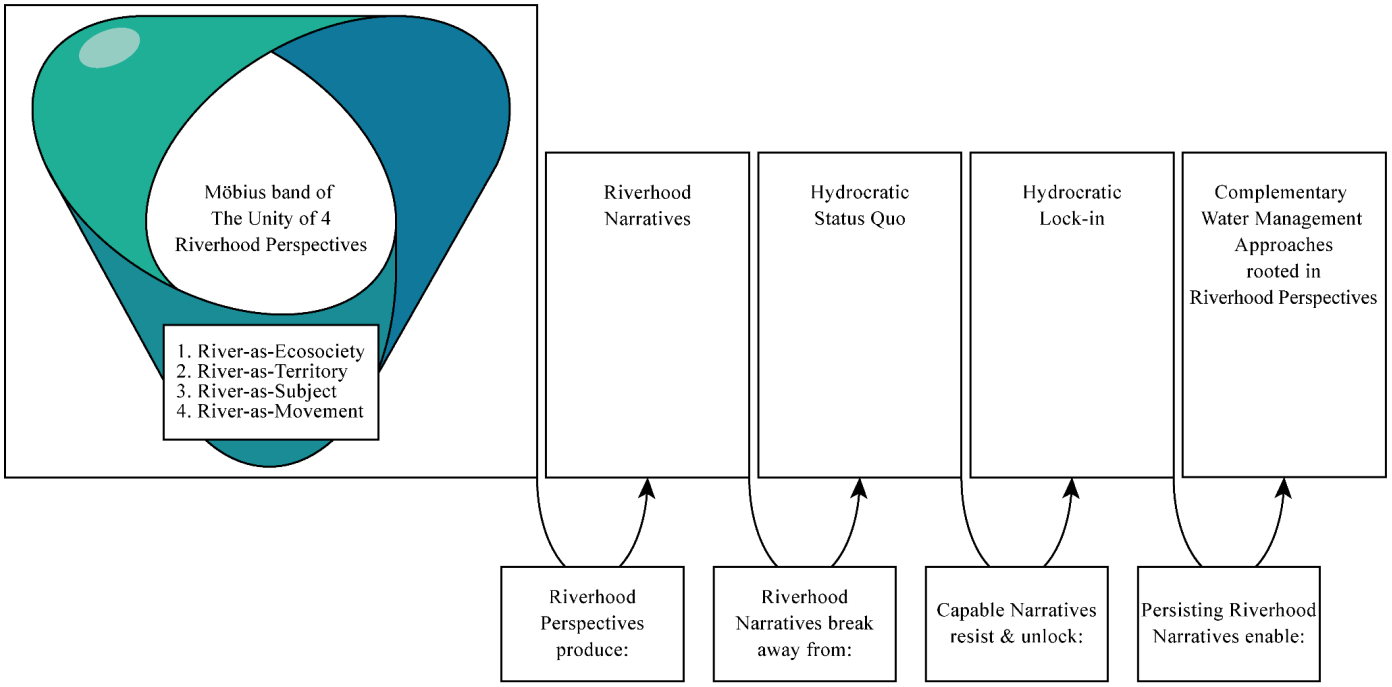
These four dimensions are not applied here as fixed categories but as interlocking lenses. For the purposes of this research, operationalising Riverhood means asking, for each dimension, what the current state of water governance along the Eelder- and Peizerdiep system reveals: whether the entanglements of society and nature are acknowledged or reduced (ecosociety); whether governance reflects territorial pluralism or imposes singular hydrocratic orders (territory); whether nature and communities are treated as subjects or objects (subject); and whether conditions exist for alternative narratives to emerge and gain momentum (movement).

In doing so, the framework serves as both a diagnostic tool, exploring where hydrocratic lock-ins may exist from a water justice perspective, and an orienting horizon pointing toward more just, relational, and ecologically attuned narratives. As previously underlined, this research does not seek to replace technology-managerial-oriented water management approaches entirely, but to identify the conditions under which alternative narratives can emerge alongside them, narratives capable of unlocking the self-reinforcing dynamics that entrench established approaches and may otherwise prevent meaningful responses to the region's challenges. This matters because new narratives hold the potential to break away from the established meanings, values, and discourses that reinforce current trajectories of social-environmental change (Shukla et al., 2022), trajectories projected to lead to groundwater table decline, ecosystem loss, drinking water shortages, and further contamination of surface and groundwater in the Kop van Drenthe (Ministerie van Infrastructuur en Waterstaat, 2021;

Planbureau voor de Leefomgeving, 2026; Waterschap Noorderzijlvest, 2024; 2025; Waterschap Vechtstromen, 2019; WMD, 2022), making the exploration of complementary alternatives both analytically and practically urgent (NDO, 2025; NMF Drenthe, 2025). Figure 3.2 situates the Riverhood framework within the analytical logic of this research. In theory, the four interwoven Riverhood perspectives can produce Riverhood narratives that, where they persist, break away from the hydrocratic status quo, resist and unlock hydrocratic lock-in, and ultimately hold the potential to enable complementary approaches to water management rooted in water justice.

Figure 3.2

Conceptual Framework: Riverhood Narratives and the Hydrocratic Lock-in as modified from Boelens et al. (2023; p. 1145). Author's own work.



4.0 Methods

This study employed a qualitative approach to investigate opportunities for Riverhood narratives to emerge along the Eelder- and Peizerdiep rivers. Semi-structured interviews explored perceptions of the role of governmental bodies in facilitating the social-environmental and governance conditions that enable the emergence of Riverhood narratives, aiming to explore both research questions.

RQ1:

How do social-environmental and governance conditions enable the emergence of Riverhood narratives along the Eelder- and Peizerdiep system?

RQ2:

How do governmental bodies create openings and barriers to the social-environmental and governance conditions that enable Riverhood narratives along the Eelder- and Peizerdiep system?

This methodology captures organisational and lived-experience insights into the mechanisms shaping configurations and outcomes of river governance, producing a nuanced representation of the status quo, challenges, and opportunities to guide further research. As a lens of political ecology, Riverhood is particularly valuable for analysing the multi-scalar and political dimensions of environmental problems in relation to river meanings, forms of use, and governance (Abazeed, 2023; Belton et al., 2026; Giraldo-Martínez et al., 2025; Xu et al., 2025). By emphasising how actor interests and daily practices both produce and are produced by power relations and nature transformations, these lenses reveal what social-environmental and governance conditions constitute the status quo, challenges, and opportunities in river governance, and lay the groundwork for alternative solutions enabled by the emergence of Riverhood perspectives and persistent narratives along the Eelder- and Peizerdiep rivers (Boelens et al., 2023; 2025a; 2025b; Giraldo-Martínez et al., 2025; Shukla et al., 2022; p. 572).

The semi-structured interviewing method is well-suited to examining perceptions and practices in complex governance contexts, such as efforts to address socio-environmental problems in the Kop van Drenthe, capturing the interconnected, subjective dynamics that are difficult to quantify yet highly influential (Boelens et al., 2023; Hennink et al., 2020). Four semi-structured in-depth interviews, averaging 85 minutes, were conducted with stakeholders from organisations involved in formulating water policy for the Peizerdiep stream valley. These stakeholders' involvement in policy formulation makes their perceptions of governance configurations and power distributions relevant for understanding place-specific manifestations of hydrocratic lock-in, as much as for identifying openings for conditions that enable Riverhood narratives.

4.1 Semi-structured Interviews

Participants were recruited through a gatekeeper approach using the network of NMF Drenthe, whose established position provides access to a wide network of actors in regional water management. Through snowball sampling, recruitment expanded to include the municipality of Tynaarlo as a second gatekeeper, a strategic addition that gave additional access to hard-to-reach participants and one that holds the potential to diffuse and reduce a degree of gatekeeper bias (Lamprianou, 2022). Figure 4.1 illustrates the recruitment process; Table 4.1 presents participant characteristics.

Figure 4.1

Gatekeeper and Participant Recruitment Process.

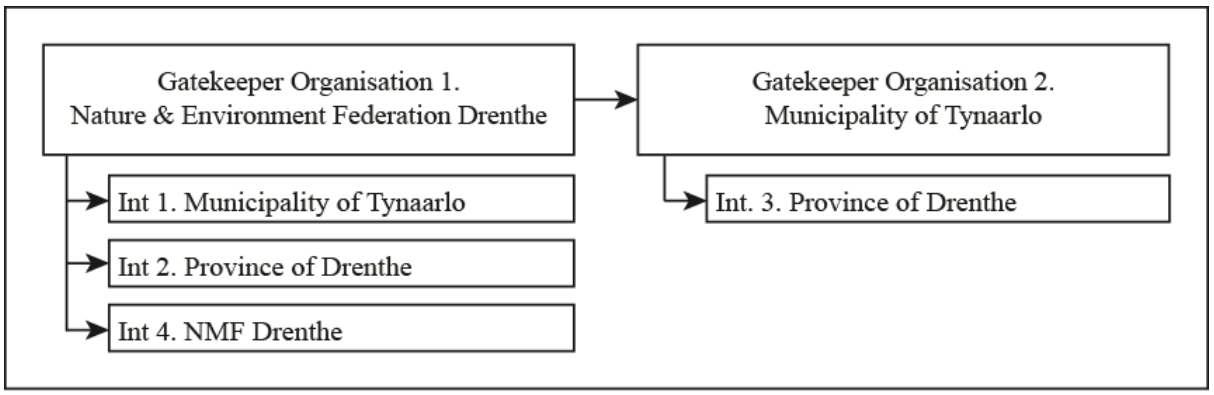


Table 4.1

Participant Characteristics.

Int. №	***Pseudonized Participant***	***Role of Participant***	***Organisation***	***Role of Organisation***	***Int. Length***
Int. 1.	Mx Bakker	Involved in policy formulation in the water domain.	Municipality of Tynaarlo	Local Government	87 min
Int. 2	Mx Abbink	Involved in policy formulation in the water domain.	Province of Drenthe	Regional Government	91 min
Int. 3	Mx Coenen	Involved in management in the environmental management domain.	Province of Drenthe	Regional Government	70 min
Int. 4	Mx Dijkstra	Involved in environmental policy advocacy. Involved as sustainability transition intermediary.	Nature and Environment Federation Drenthe	Regional Environmental Non-profit Foundation, NGO	93 min

The interview guide (Appendix G) is structured around the four dimensions of the Riverhood framework (Chapter 3.3; Figure 3.1), ensuring that each section systematically probes the social-environmental and governance conditions most relevant to the emergence of Riverhood narratives, while grounding participants' responses in the place-specific realities of the Kop van Drenthe.. The interview guide, while framing the dialogue within the research topic, allowed the interviewer to retain flexibility to pursue emergent themes (Appendix G, Section 5), enabling both focus and depth. Findings were analysed using a deductive coding procedure anchored in the Riverhood framework (Boelens et al., 2023, p. 1145; Figure 3.1; Appendices A and B), while remaining open to patterns arising from the data (Hennink et al., 2020; Pratt, 2025).
These data were coded in Atlas.ti and underwent deductive thematic analysis based on themes identified in the Riverhood framework and aligned with the conceptual model shown in Figure 3.2 (Boelens et al., 2023; p. 1145; Appendices A and B). Throughout the analysis, coding procedures (Appendix A) were applied to identify how social-environmental and governance conditions were described to play a role in the potential emergence of Riverhood narratives.

4.2 Research Ethics

Given the political sensitivity of topics such as nature development, agriculture, and pollution, all reasonable precautions were taken to ensure anonymity and to inform participants about my data management practices. This process was formalised in consent forms signed prior to each interview (Appendix D). Informed consent procedures were tailored to participants' institutional contexts, with verbal reaffirmations prior to, during, and after the recorded interview. All directly identifying material was removed, pseudonyms were used, data is stored on protected university servers, and audio files were deleted after the completion of anonymised transcription. Participants have received the report prior to its submission to the supervisor, NMF Drenthe, and NDO, for review, so that they retain the opportunity to withdraw or correct statements, and withdraw their full participation. My positionality as an external academic researcher in collaboration with NMF Drenthe and NDO was explicitly acknowledged throughout the interviews.

5. Findings

The interviews with employees of the Municipality of Tynaarlo, Province of Drenthe, and NMF Drenthe have yielded a range of insights into how social-environmental and governance conditions enable or undermine the emergence of Riverhood narratives along the Eelder- and Peizerdiep system. The account from Mx Dijkstra (NMF Drenthe) proved particularly helpful for structuring these insights, as, in engaging with the Riverhood lens, it revealed a typology of thinking that captures how dominant orientations in water management shape the status quo and where openings for alternative narratives may exist. The accounts below give an indication of how Mx Dijkstra's account reflects on the types of thinking related to openings and barriers to the emergence of Riverhood narratives.

> *We wanted the solution [to increasing water retention capacity of the Kop van Drenthe] to be realised in the upper catchments; you wouldn't need [to increase the capacity of De Onlanden, causing ecological damage] at all. [...] We didn't get that through, because there was considerable [regulation-induced] time pressure. [...] But through our pressure, we did manage to ensure that the most vulnerable parts were spared.*

Quote 1: (Beyond) Regulation-Thinking
~ Mx Dijkstra (NMF Drenthe)

It's not that there isn't much going on [in terms of movements for water justice], there are IVN groups, Natuurbelang de Onlanden, the sports fishers. But if you ask a water official, they don't come up with that. [...] And on water specifically, actually nothing at all.

Quote 2: (Beyond) Government-Thinking
~ Mx Dijkstra (NMF Drenthe)

You can't just have the government make a plan and then go into the area and expect people to simply start cooperating. That has to grow.

Quote 3: (Beyond) Technology-Thinking
~ Mx Dijkstra (NMF Drenthe)

We are also simply too spoiled in the Netherlands. You turn on a tap, you get water.

Quote 4: (Beyond) Utilitarian Nature-Thinking
~ Mx Dijkstra (NMF Drenthe)

This typology, emerging inductively from the interviews and interpreted through the Riverhood analytical lens, classifies the findings into four paired categories: Regulation-Thinking, Government-Thinking, Technology-Thinking, and Utilitarian Nature-Thinking. Each represents a dominant orientation that, as suggested across the interviews, tends to disqualify and crowd out complementary approaches to water management rooted in water justice. Their counterparts, Beyond Regulation-, Government-, Technology-, and Utilitarian Nature-Thinking, represent openings: orientations and narratives that hold potential to enable Riverhood perspectives. Table 5.1 presents this structure, which organises Chapters 5.1 through 5.4.

Table 5.1

A classification of types of thinking that shape how social-environmental and governance conditions enable or undermine the emergence of Riverhood narratives. Quote numbers relate to the quotes as numbered on page 19-20.

Quote №	***Openings: Enable Riverhood perspectives***	***Barriers: Undermine Riverhood perspectives***
1.	*Beyond Regulation-Thinking*	*Regulation-Thinking*
2.	*Beyond Government-Thinking*	*Government-Thinking*
3.	*Beyond Technology-Thinking*	*Technology-Thinking*
4.	*Beyond Utilitarian Nature-Thinking*	*Utilitarian Nature-Thinking*

This framing makes sense within the Riverhood framework, given that both emphasise how dominant technological-managerial and government-centric narratives systematically suppress alternative social-environmental narratives (Boelens et al., 2023; 2025a; 2025b). By structuring findings onto

barriers and openings, the structure explores not only the persistence of hydrocratic lock-in in the Kop van Drenthe, but also where Riverhood narratives might begin to take hold.

5.1 (Beyond) Regulation-Thinking

A recurring theme across interviews is the degree to which regulatory frameworks, particularly the Nature Network Netherlands (NNN) and the Water Framework Directive (WFD), confine water quality and nature development ambitions in the Kop van Drenthe. Rather than serving as minimum standards from which more expansive policies can be built (Zuidema, 2017), the accounts suggest these frameworks function as a ceiling.

This dynamic is illustrated by the trajectory of remeandering along the Eelder- and Peizerdiep. As Mx Bakker recounts, the removal of NNN-designated areas around 2012 removed not only a legal instrument but the institutional basis for thinking beyond the mandatory.

> *“The NNN was actually leading for the perspective of developing nature in the [Peizerdiep system]. But then came [Secretary of State Agriculture & Nature 2010-2012], who removed much of the NNN [areas along the Peizerdiep system]. This has been a major setback, which we are still suffering from today. Since then, there haven’t been new allocations for nature development, and the whole remeandering has come to a bit of a halt.”*

~ Mx Bakker (Mun. Tynaarlo)

Mx Coenen's account reflects comparable inflexibility, while Mx Abbink highlights the Province's apparent inability or unwillingness to act beyond minimum legal obligations.

> *“The main challenge is to realise the NNN and the WFD [...] The Eelderdiep system is actually mainly agriculture, without NNN-ambitions.”*

~ Mx Coenen (Prov. Drenthe)

> *"[Province of Drenthe] sticks to the legal obligation, and anything that goes even a little beyond that, we don't do it."*

~ Mx Abbink (Prov. Drenthe)

A further limiting mechanism is the reduction of nature to what can be measured, standardised, and reported. Mx Abbink reflects on the constraints of a deterministic, quantitative approach, while Mx Coenen illustrates how the planning process is structured around assembling technical experts to meet, rather than interrogate, set standards.

> *"With the WFD (EU, 2000), we're also dealing in numbers, but with nature we're also dealing in very strict numbers [in context of Natura2000 and NNN frameworks]. [...] So this is not flexible [...] we are too quick to put it in a box [...] the [accompanying] use restrictions then determine [the interventions and the outcome]."*

~ Mx Abbink (Prov. Drenthe)

[Interviewer: What kind of principles are being weighed in that process?] "Standards are standards. There are people who know business, civil servants; the ecologists, the hydrologists and the like. It is mainly a task of getting them into a room together [to develop plans according to WFD standards and NNN ambitions]."

~ Mx Coenen (Prov. Drenthe)

Together, these findings suggest a technocratic orientation in which regulatory compliance, aligned with the broader quantitative, top-down logic of the WFD (Boelens et al., 2023, p. 1129), systematically crowds out more collective and alternative approaches. The question of what a river system could be is subordinated to what the law requires it to be. While quantitative standards remain a cornerstone of minimum ecological quality (Zuidema, 2017), the accounts suggest they currently function to undermine more expansive efforts and the alternative narratives needed to complement them in the Kop van Drenthe.

5.2 (Beyond) Government-Thinking

A second theme concerns the degree to which addressing social-environmental problems is perceived as naturally belonging within government domains, confined to formal processes and established actors, in ways that disqualify more collective alternatives. Whereas the previous section highlighted the constraining role of regulatory frameworks, this section addresses a related but distinct limitation: the apparent difficulty of perceiving water management as anything other than a governmental, bureaucratic undertaking. Decision-making is perceived as so complex that there is no political will to involve stakeholders beyond established interest organisations and landowners, while resident engagement is constrained to consultations on implementation details.

"[viewing the watersystem] is actually a fairly bureaucratic affair, separate from broader involvement. In that process, farmer organisations, nature organisations, and governments are involved, and that's it. [...] A reason for this is that the process is so slow and difficult because there is no political will in the province to fully go for this."

~ Mx Bakker (Mun. Tynaarlo)

This framing, in which collective approaches are secondary to governmental action, is further illustrated by Mx Bakker's reflection on the limited role of residents and the absence of urgency for more inclusive methods, particularly around farmer collaboration in the most drainage-oriented and vulnerable catchments.

“We impose a lot of demands on farmers, but they have far too few opportunities to actually do anything about it. There are some good initiatives, but they get blocked by the water board [...] [The Province] has its rules and nothing is allowed.
[...] For water retention, collaboration with farmers is crucial. [...] On the one hand, they want to get onto the land with their tractors as early as possible, and on the other, they want enough water in summer. They understand themselves that there is a tension there [...] Much more interactive ways of working on policy could be developed [...], but there's simply no sense of urgency felt for that.”

~ Mx Bakker (Mun. Tynaarlo)

At the provincial level, Mx Coenen's account reflects a comparable inward orientation, with attention focused on finalising physical remeandering projects rather than broader social engagement.

"In recent years, we have actually been mainly occupied with preparing the final processes."

~ Mx Coenen (Prov. Drenthe)

Together, these accounts reveal a frame that naturalises environmental planning as determined by institutional actors and procedural constraints. Societal actors beyond established interest organisations are not perceived as co-creators but as consultees within a process that proceeds largely on governmental terms, an orientation Boelens et al. (2023) identify as systematically disqualifying alternative narratives and modes of collective action, and one that, in the context of the Kop van Drenthe, constrains the transformative capacity of those alternatives.

5.3 (Beyond) Technology-Thinking

A third theme concerns the dominance of technological and engineering solutions in governmental responses to the region's social-environmental challenges, and the tension this creates with an emerging recognition that purely technological approaches may be insufficient.
Mx Bakker's account reflects a perception of technical solutions as self-evident, an orientation that, if over-pronounced, forecloses deliberation about values, trade-offs, and alternative narratives (Boelens et al., 2023).

"We can just get started, really. We all know what needs to be done. [...] Actually, [the solution] is already a given in itself. [...] Just take a look at [the meanders on] old maps, that’s how we are going to [...] remeander, and then you’re for sure doing well."

~ Mx Bakker (Mun. Tynaarlo)

Mx Abbink offers a more nuanced perspective, acknowledging the limits of technology while simultaneously reflecting an assumption that broader publics cannot grasp the complexity involved.

"I don't think betting on technology alone will get you there. [...] [On the other hand,] I don't think people grasp that you need a stream valley to deal with [extreme drought/rainfall]."

~ Mx Abbink (Prov. Drenthe)

This assumption can reinforce exclusionary mechanisms, foreclosing non-expert contributions and alternative narratives (Boelens et al., 2023; 2025a; 2025b; Giraldo-Martínez et al., 2025). Mx Coenen's account further illustrates how technical procedures structure how problems are defined and solutions evaluated, most visibly in the water storage expansion of De Onlanden, where complex spatial and ecological trade-offs were resolved through an engineered compartmentalisation solution. While the deliberate concentration of storage in ecologically less sensitive areas reflects ecological consideration beyond standalone hydro-technical reasoning, it nonetheless suggests a frame in which nature is an object to be managed and optimised rather than a dynamic entanglement whose complexity might inform solutions.
Together, technology-thinking in the Kop van Drenthe materialises in multiple forms: as confident assumption, as structuring procedural logic, and as a barrier to broader public inclusion. In Boelens et al.'s (2023) terms, water management instruments are treated as neutral and apolitical rather than as carriers of values and power relations, frames that again disqualify alternative narratives and constrain the transformative capacity of collective approaches.

5.4 (Beyond) Utilitarian Nature-Thinking

A fourth theme concerns the degree to which nature is perceived primarily in utilitarian terms reduced to measurable parameters, economic metrics, and productivist resources, and thus treated as an object of extraction and control (Boelens et al., 2023; 2025a; 2025b). This orientation runs through the previous sections: in the reduction of nature to regulatory hectares; in its subordination to governmental procedures; and in its management through technical instrumentation. Mx Abbink's account points to both the persistence of this orientation and the contours of a potentially emerging alternative.

> *"I think many people already see it as climate-change nature. [...] You shouldn't only have nature hectares, but climate hectares. [...] You need to move more towards a nature that develops alongside climate scenarios."*

~ Mx Abbink (Prov. Drenthe)

The distinction between nature hectares and climate hectares is revealing. It can represent a genuine reframing; an acknowledgement that static regulatory thinking is insufficient and that ecological systems can be understood as adaptive. Yet it also risks replacing one form of instrumentalisation with another: where nature hectares served regulatory compliance, climate hectares serve climate adaptation, leaving nature valued for what it does rather than what it is. The entanglements of ecological systems with community life, cultural meaning, and non-human agency that a Riverhood narrative would foreground (Boelens et al., 2023) remain absent from this framing. Moreover, if incremental steps toward beyond-utilitarian thinking remain constrained by dominant frames, they risk reinforcing rather than dismantling them (Boelens et al., 2023; 2025a; 2025b; Jänicke, 2007; Meadowcroft, 2009).

Together, sections 5.1 through 5.4 point to a consistent pattern: water management in the Kop van Drenthe remains oriented around regulatory, government-centric, technocratic, and utilitarian perceptions that, while functional within their own terms, may systematically crowd out the complementary, relational narratives necessary to address the region's social-environmental challenges.

6. Conclusion

"If we see nature as an ally, and we give her the space to be healthy on a system-level, we will find the solutions to the challenges of climate, food, and wellbeing" (NDO, 2025, p. 13). This vision of alliance, the one that opened this research, is precisely what the findings suggest has yet to find a foothold in the governance arrangements of the Kop van Drenthe.

This research set out to explore the social-environmental and governance conditions that enable or undermine the emergence of Riverhood narratives along the Eelder- and Peizerdiep system, and to examine how governmental bodies create openings and barriers to those conditions. The findings, structured around four paired categories of thinking derived inductively from the interviews and interpreted through the Riverhood analytical lens, suggest a consistent pattern: that water management in the Kop van Drenthe may remain predominantly oriented around regulatory compliance, governmental authority, technological instrumentation, and utilitarian perceptions of nature. Together, these orientations constitute a hydrocratic status quo that, while functional within its own terms, tends to systematically disqualify and crowd out the potentially complementary, relational, and collectively negotiated narratives that a Riverhood perspective would foreground as necessary for addressing the region's social-environmental challenges.

The findings do not suggest that governmental actors are indifferent to the region's challenges, nor that meaningful ecological work is absent. The remeandering efforts along the Peizerdiep system, the deliberate effort to spare ecologically sensitive areas in the water storage expansion of De Onlanden, and the emerging recognition that nature must develop alongside rather than against climate scenarios can point to genuine, if incremental, movement. What the findings do suggest, however, is that these incremental steps operate within and are ultimately constrained by the same dominant frames they partially challenge. Beyond-thinking, where it exists, appears to remain tentative, present in individual orientations and fragmented decisions, but not yet consolidated into the alternative narratives capable of unlocking the self-reinforcing dynamics that entrench established approaches. These conclusions must be read with consideration of the limitations of the research. This study is explicitly exploratory, based on four interviews with actors from a narrow institutional range. Perspectives further from formal governance structures, farmers, residents, local nature interest groups, and other civic actors whose voices the Riverhood framework would consider central, remain underrepresented in the findings. The typology of thinking presented here is analytically productive but best understood as a framework for future investigation rather than a definitive account of governance conditions in the region.

6.1 Future Research

This is precisely where further research becomes urgent. The findings point repeatedly to a gap between the complexity of the region's social-environmental challenges and the narrowness of the publics currently invited to engage with them. Mx Dijkstra's observation that water simply does not register as urgent for most residents, until a drought or flood makes it impossible to ignore, pinpoints a communication and engagement challenge as much as a governance one. Hence, there is a need to furher investigate how alternative narratives might be mobilised to include broader publics currently excluded from governance processes; residents, farmers navigating contradictory pressures, and civic groups whose local ecological knowledge and relational entanglements with the landscape remain underutilised. How are water challenges currently communicated in the region, by whom, and to whom? What narrative forms, media, and participatory methods might help alternative orientations to nature and water gain traction beyond expert and institutional circles?

These questions are not peripheral to the governance challenge; they are constitutive of it. Riverhood narratives do not emerge in a vacuum; they require the communicative conditions in which alternative meanings of rivers, nature, and collective responsibility can be articulated, shared, and sustained. This research offers a first diagnostic illustration of where those conditions may currently lack, and where openings to build them may lie.

7. AI-Statement

Generative AI, Claude (claude-sonnet-4-6), was used in the production process of this research project as inspirational sparring partner and as a language checker; fixing grammar and suggesting synonyms, alternative phrasings, and improved clarity for the original text. The prompt reads: “Provide 5 concise reformulations of this sentence: [input original text].” Furthermore, as I am untreatably ‘lang van stof’, Claude (claude-sonnet-4-6) was used in the production process of this research project to cut and compact in order to improve readability and reach the word limit, for which the prompt reads: “Cut and compact this without changing its meaning: [input original text].”

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Appendix A: Deductive Coding Protocol

Table A.1

Deductive Coding Protocol for Thematic Analysis of the Interviews.

Riverhood Ontology Categories & Codes	Deductive Coding Protocol
1. River-as-Ecosociety	Reasonably specific and relevant mention of:
1.1 Socionatural Framing	The degree to which the river can be understood as a dynamic entanglement of interactions between physical features, river ecologies, and communities.
1.2 Technocratic Reduction	The degree to which the river is reduced to techno-managerial simplistic abstractions of hydraulic, ecological, economic, or model-based parameters.
1.3 Infrastructure as a Neutral Tool	The degree to which water infrastructure is reduced as technical and apolitical.
1.4 Recognition of Hidden Rivers	The degree of awareness and balance of prioritisation between the visible river and subsurface, groundwater, atmospheric cycles, or indirect impacts.
1.5 River Commons Framing	The degree to which the river is described as shared responsibility, a collective good or a common pool resource.
1.6 Conflict of River Meanings	The degree to which the river can consist of competing understandings.
2. River-as-Territory	Reasonably specific and relevant mention of:
2.1 Territorial Ordering	The degree of zoning, spatial planning, water levels, and land-use allocation.
2.2 Normative Distribution Logic	Implicit or explicit institutions about water resources and safety distribution.
2.3 Hydrocratic Authority	The degree to institutional self-positioning as a legitimate water authority.
2.4 Moralization of Technology	The degree to which technology is framed as necessary, rational, and inevitable.
2.5 Vernacular Governance Recognition	The degree of local knowledge, informal practices, and agricultural water management traditions.
2.6 Epistemic Violence	The degree of dismissal or sidelining of alternative knowledge systems.
2.7 Territorial Pluralism	The degree of recognition of the coexistence of multiple governance logics.

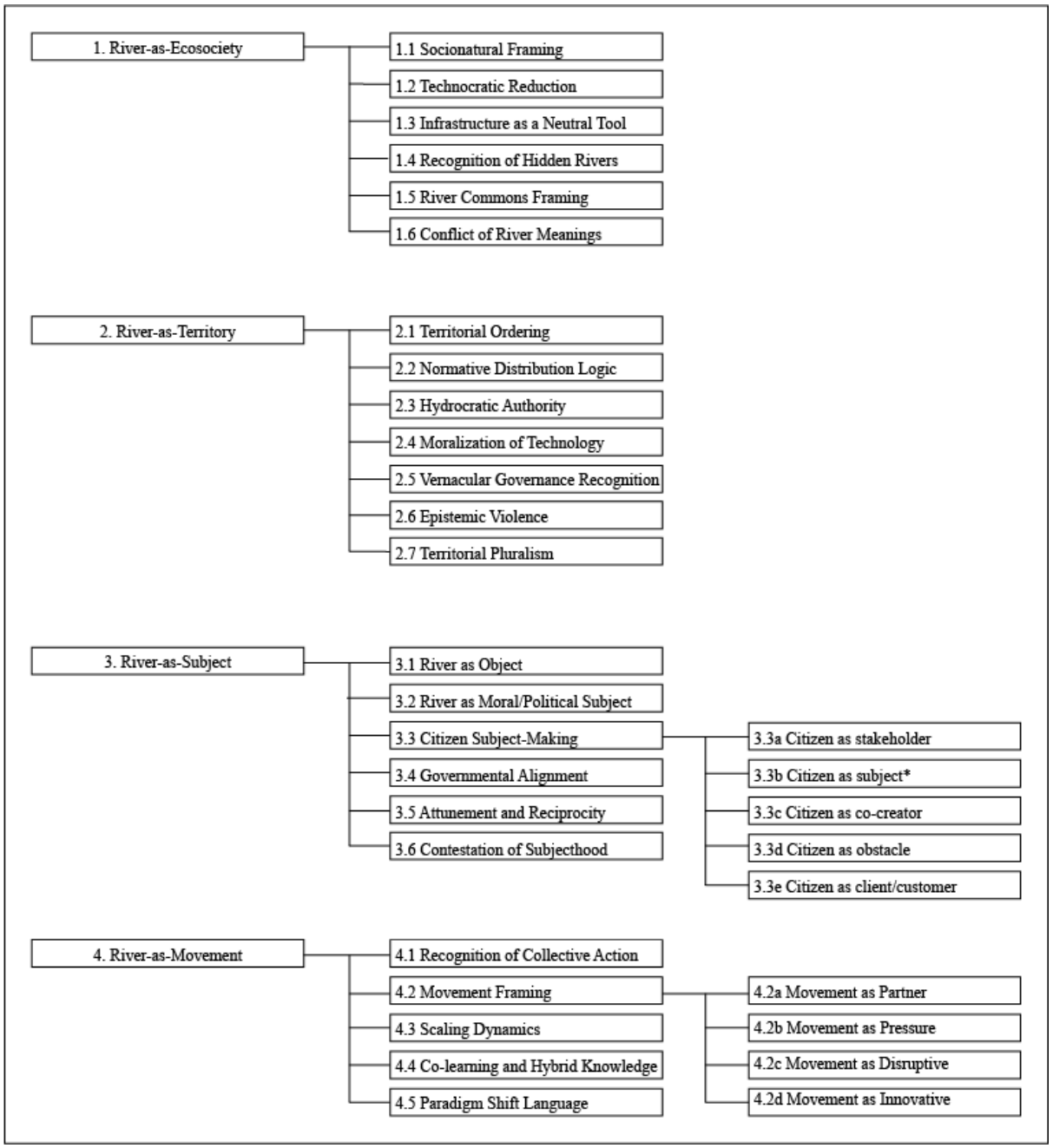
Riverhood Ontology Categories & Codes	Deductive Coding Protocol
3. River-as-Subject	Reasonably specific and relevant mention of:
3.1 River as Object	The degree to which the river is treated as a managed entity.
3.2 River as Moral/Political Subject	The degree to which the river is treated as having intrinsic value, rights, or agency.
3.3 Citizen Subject-Making 3.3a. Citizen as stakeholder 3.3b. Citizen as subject 3.3c. Citizen as co-creator 3.3d. Citizen as obstacle 3.3e. Citizen as client/customer	The degree to which citizens are framed as: 3.3a: To inform, consult, involve; 3.3b: To govern, protect, control; 3.3c: To include in decision-making processes; 3.3d: To overcome, exclude, controle; 3.3e: To satisfy, provide for, protect.
3.4 Governmental Alignment	The degree to which efforts align citizens with hydrocratic onto-epistemologies.
3.5 Attunement and Reciprocity	The degree of expressions of care, responsiveness, relationality toward river and citizens and their entanglements.
3.6 Contestation of Subjecthood	The degree to acknowledgement of the existence of competing interest and disputes over who has voice, rights, and legitimacy.
4. River-as-Movement	Reasonably specific and relevant mention of:
4.1 Recognition of Collective Action	The degree of mention of organized citizen groups, NGOs, farmer collectives.
4.2 Movement Framing 4.2a. Movement as Partner 4.2b. Movement as Pressure 4.2c. Movement as Disruptive 4.2d. Movement as Innovative	The degree to which citizens are framed as: 4.2a: To include in decision-making processes; 4.2b: To pressure institutions and structures; 4.2c: To disrupt rigid systems; 4.2d: To innovate, produce alternatives, and affect change.
4.3 Scaling Dynamics	The degree to which movements are considered as having the capacity to scale and having transformative capacity through scaling dynamics
4.4 Co-learning and Hybrid Knowledge	The degree to mutual learning between governmental and grassroots actors.
4.5 Paradigm Shift Language	The degree of references to transformation, transition, and new governance models.

Note: Codes start at the numbers behind decimal point; 4. River-as-Movement is a category, not a code in itself.

Appendix B: Deductive Coding Tree

Figure B.1

Deductive Coding Tree for Thematic Analysis of the Interviews.



*Note: *: Citizen as subject; is meant to mean a subject of the state to be governed, not to be confused with Citizen Subject-making. Further confinement of this code sub-category is indicated in Appendix A.*

Appendix C: Riverhood and River Commoning Literature

Table A.1

Literature Review Results for Scopus search terms 'Riverhood' and 'River Commoning' in alphabetical order per first author.

№	Avail-able	Author	Year	Double	Search Term in Scopus	Title	Journal/ Book	Full Citation
№ 1	yes	**Abazeed**	**2023**	no	Riverhood	Heterogeneity of Water Justice and the Question of Nile Solidarity	Agrarian South	Abazeed, A. R. Y. (2023). Heterogeneity of water justice and the question of Nile solidarity. Agrarian South: Journal of Political Economy, 12(2), 187–205. https://doi.org/10.1177/22779760231170530
№ 2	yes	**Armiero et al.**	**2020**	no	River Commoning	The nature of Mafia: An environmental history of the simeto river basin, sicily	Environment and History	Armiero, M., Gravagno, F., Pappalardo, G., & Ferrara, A. D. (2020). The nature of Mafia: An environmental history of the Simeto River Basin, Sicily. Environment and History, 26(4), 579–608. https://doi.org/10.3197/096734019X15463432086793
№ 3	yes	**Belton et al.**	**2025**	no	Riverhood	Articulating alternatives to the anti-politics of blue growth	Maritime studies	Belton, B., Skladany, M. A., Harris, C., Egna, H., McManama, B. J., & Anglin, R. (2026). Articulating alternatives to the anti-politics of blue growth. Maritime Studies, 25(2), Article 2. https://doi.org/10.1007/s40152-025-00463-8

№	Avail-able	Author	Year	Double	Search Term in Scopus	Title	Journal/ Book	Full Citation
№ 4	yes	**Boelens et al.**	**2023**	yes	Riverhood	Riverhood: political ecologies of socionature commoning andtranslocal struggles for water justice	The Journal Of Peasant Studies	Boelens, R., Escobar, A., Bakker, K., Hommes, L., Swyngedouw, E., Hogenboom, B., Huijbens, E. H., Jackson, S., Vos, J., Harris, L. M., Joy, K. J., de Castro, F., Duarte-Abadía, B., Tubino de Souza, D., Lotz-Sisitka, H., Hernández-Mora, N., Martínez-Alier, J., Roca-Servat, D., Perreault, T., Sanchis-Ibor, C., Suhardiman, D., Ulloa, A., Wals, A., Hoogesteger, J., Hidalgo-Bastidas, J. P., Roa-Avendaño, T., Veldwisch, G. J., Woodhouse, P., & Wantzen, K. M. (2023). Riverhood: Political ecologies of socionature commoning and translocal struggles for water justice. https://doi.org/10.1080/03066150.2022.2120810
№ 5	yes	**Boelens et al.**	**2023**	yes	River Commoning	Riverhood: political ecologies of socionature commoning andtranslocal struggles for water justice	The Journal Of Peasant Studies	Boelens, R., Escobar, A., Bakker, K., Hommes, L., Swyngedouw, E., Hogenboom, B., Huijbens, E. H., Jackson, S., Vos, J., Harris, L. M., Joy, K. J., de Castro, F., Duarte-Abadía, B., Tubino de Souza, D., Lotz-Sisitka, H., Hernández-Mora, N., Martínez-Alier, J., Roca-Servat, D., Perreault, T., Sanchis-Ibor, C., Suhardiman, D., Ulloa, A., Wals, A., Hoogesteger, J., Hidalgo-Bastidas, J. P., Roa-Avendaño, T., Veldwisch, G. J., Woodhouse, P., & Wantzen, K. M. (2023). Riverhood: Political ecologies of socionature commoning and translocal struggles for water justice. https://doi.org/10.1080/03066150.2022.2120810
№ 6	yes	**Boelens et al.**	**2025**	yes	Riverhood	Travelling rivers, mapping movements. Counter-mappingand translocal river defense networks	The Journal Of Peasant Studies	Boelens, R., Duarte-Abadía, B., Arbelaez-Trujillo, A. M., Forigua-Sandoval, J., Giraldo-Martínez, L., Reyes-Bejarano, S., Tubino-de-Souza, D., Silva-Orozco, J. S., Klarenbeek, M., & Zavala-Taday, S. (2025). Travelling rivers, mapping movements: Counter-mapping and translocal river defense networks. Journal of Peasant Studies. Advance online publication. https://doi.org/10.1080/03066150.2025.2562592

№	Avail-able	Author	Year	Double	Search Term in Scopus	Title	Journal/ Book	Full Citation
№ 7	yes	**Boelens et al.**	**2025**	yes	River Commoning	Travelling rivers, mapping movements. Counter-mapping and translocal river defense networks	The Journal Of Peasant Studies	Boelens, R., Duarte-Abadía, B., Arbelaez-Trujillo, A. M., Forigua-Sandoval, J., Giraldo-Martínez, L., Reyes-Bejarano, S., Tubino-de-Souza, D., Silva-Orozco, J. S., Klarenbeek, M., & Zavala-Taday, S. (2025). Travelling rivers, mapping movements. Counter-mapping and translocal river defense networks. Journal of Peasant Studies. Advance online publication. https://doi.org/10.1080/03066150.2025.2562592
№ 8	yes	**Boelens et al.**	**2025**	no	River Commoning	Hydrosocial territories: imaginaries, materialities, and struggles over knowledge, order and meaning	Water International	Boelens, R., Hommes, L., Hoogesteger, J., Swyngedouw, E., Vos, J., & Wester, P. (2025). Hydrosocial territories: Imaginaries, materialities, and struggles over knowledge, order and meaning. Water International, 50(5), 426–462. https://doi.org/10.1080/02508060.2025.2528261
№ 9	no	**Chien**	**2021**	no	River Commoning	Adaptive Management in Urban Stream Governance: A Review and an Urban Commoning Scenario-Building Exercise	Journal of self-governm ent	Chien, H. (2021). Adaptive management in urban stream governance: A review and an urban commoning scenario-building exercise. Lex Localis – Journal of Local Self-Government, 19(3), 659–688. https://doi.org/10.4335/19.3.659-688(2021)
№ 10	yes	**Giraldo-Martínes et al.**	**2025**	no	River Commoning	River mapping and the politics of eco-scalar fixes. Reconnecting upstream–downstream networks through critical cartographies of Colombia's Bogotá River	Geoforum	Giraldo-Martínez, L., Boelens, R., & Duarte-Abadía, B. (2025). River mapping and the politics of eco-scalar fixes: Reconnecting upstream–downstream networks through critical cartographies of Colombia's Bogotá River. Geoforum, 165, Article 104379. https://doi.org/10.1016/j.geoforum.2025.104379
№ 11	yes	**Haldrup et al.**	**2022**	no	River Commoning	Designing for Multispecies Commons: Ecologies and Collaborations in Participatory Design	ACM International Conference Proceeding Series	Haldrup, M., Samson, K., & Laurien, T. (2022). Designing for multispecies commons: Ecologies and collaborations in participatory design. In V. Vlachokyriakos et al. (Eds.), Proceedings of the Participatory Design Conference 2022 (PDC '22) (Vol. 2, pp. 14–19). Association for Computing Machinery. https://doi.org/10.1145/3537797.3537801

№	Avail-able	Author	Year	Double	Search Term in Scopus	Title	Journal/ Book	Full Citation
№ 12	yes	**Hoogesteger et al.**	**2023**	no	River Commoning	River Commoning and the State: A Cross‐Country Analysis of River Defense Collectives	Politics and Governance	Hoogesteger van Dijk, J., Suhardiman, D., Boelens, R., de Castro, F., Duarte Abadía, B., Hidalgo‐Bastidas, J. P., Liebrand, J., Hernández‐Mora, N., Manorom, K., Veldwisch, G. J., & Vos, J. M. C. (2023). River commoning and the state: A cross‐country analysis of river defense collectives. Politics and Governance, 11(2), 280–292. https://doi.org/10.17645/pag.v11i2.6316
№ 13	yes	**Kalonya**	**2021**	no	River Commoning	Environmental movements in Turkey from the perspective of commons	International Journal of the Commons	Kalonya, D. H. (2021). Environmental movements in Turkey from the perspective of commons. International Journal of the Commons, 15(1), 236–258. https://doi.org/10.5334/ijc.1088
№ 14	yes	**Lambert-Pennington & Pappalardo**	**2025**	no	River Commoning	'Life after progress': Near-Industrial commons and heritage-making in eastern Sicily	Journal Of Modern Italian Studies	Lambert-Pennington, K., & Pappalardo, G. (2025). 'Life after progress': Near-industrial commons and heritage-making in eastern Sicily. Journal of Modern Italian Studies, 30(1), 58–78. https://doi.org/10.1080/1354571X.2024.2424092
№ 15	yes	**Lau**	**2022**	no	River Commoning	Protecting the mountainous catchment area of the Kuang Si Waterfall, Lao PDR	Asia Pacific Viewpoint	Lau, Y. (2022). Protecting the mountainous catchment area of the Kuang Si Waterfall, Lao PDR. Asia Pacific Viewpoint, 63(2), 207–223. https://doi.org/10.1111/apv.12316
№ 16	yes	**Mickelsson et al.**	**2024**	no	River Commoning	Bringing river health into being with citizen science: River commons co-learning and practice	South African Journal of Science	Mickelsson, M., Thifhulufhelwi, R., Mvulane, P., Brownell, F., Russell, C., & Lotz-Sisitka, H. (2024). Bringing river health into being with citizen science: River commons co-learning and practice. South African Journal of Science, 120(9-10), 1-9. https://doi.org/10.17159/sajs.2024/17795
№ 17	yes	**O'Donnell et al.**	**2022**	no	River Commoning	Rights and Relationality: A Review of the Role of Law in the Human/Water Relationship	Water Alternatives	O'Donnell, E., Clark, C., & Killean, R. (2024). Rights and relationality: A review of the role of law in the human/water relationship. Water Alternatives, 17(2), 207–238. https://www.water-alternatives.org/index.php/alldoc/articles/vol17/v17issue2/749-a17-2-7/file

№	Avail-able	Author	Year	Double	Search Term in Scopus	Title	Journal/ Book	Full Citation
№ 18	yes	**Pezutti et al.**	**2018**	no	River Commoning	Commoning in dynamic environments: Community-based management of turtle nesting sites on the lower Amazon floodplain	Ecology and Society	Pezzuti, J. C. B., de Castro, F., McGrath, D. G., Saikoski Miorando, P. S., Sá Leitão Barboza, R., & Carneiro Romagnoli, F. (2018). Commoning in dynamic environments: Community-based management of turtle nesting sites on the lower Amazon floodplain. Ecology and Society, 23(3), Article 36. https://doi.org/10.5751/ES-10254-230336
№ 19	yes	**Stokman et al.**	**2020**	no	River Commoning	Water Commoning: Testing the Bille River in Hamburg as a Space for Collaborative Experimentation	Water-Related Urbanization and Locality	Stokman, A., Pelger, D., Rost, A., & Halbrock, D. (2020). Water commoning: Testing the Bille River in Hamburg as a space for collaborative experimentation. In F. Wang & M. Prominski (Eds.), Water-related urbanization and locality (pp. 145–160). Springer. https://doi.org/10.1007/978-981-15-3507-9_8
№ 20	yes	**Xu et al.**	**2025**	no	Riverhood	Towards a critical understanding of digital twins: The politics of digitalizing rivers in China	Nature and Space	Xu, Q., Rogers, S., Veldwisch, G. J., Melsen, L., Han, X., & Boelens, R. (2025). Towards a critical understanding of digital twins: The politics of digitalizing rivers in China. Environment and Planning E: Nature and Space. Advance online publication. https://doi.org/10.1177/25148486251386256

Appendix D: Information and Permission Form

Toestemming voor deelname aan het onderzoek
“Betrokkenheid in watermanagement in het Eelder- en Peizerdiepgebied”

Dit onderzoek wordt uitgevoerd door mij, Casper Klooster, als onderzoeksmaster student van de Rijksuniversiteit Groningen in opdracht van Natuur en Milieufederatie Drenthe en Stichting Natuurbelang De Onlanden. Met dit formulier informeer ik u over ons onderzoek, de wijze waarop ik uw anonimiteit waarborg, en vraag ik uw toestemming voor deelname aan het interview.

Waarom doen we dit onderzoek?
De afgelopen eeuwen is Nederland ingericht om overtollig water zo snel mogelijk af te voeren naar zee. Drogere perioden nemen echter toe en zeker in tijden van extreme droogte telt elke druppel regenwater. Omgaan met wateroverlast en droogte vraagt een samenhangende aanpak. Nederland moet van een vergiet weer een spons worden. Het Peizerdiepgebied, waar water van hoogveen naar laagveen stroomt, biedt in deze context een ontzettend interessante ‘spons case-studie’. Het 'her-sponsen' van het gebied is een enorme opgave, eentje waar overheden, (agrarische) bedrijven, maar ook zeker individuele huishoudens de schouders onder zullen moeten steken. Het onderwerp waar we in gedoken zijn, draait om de aanname dat die omslag in prioriteiten, die transformatie, een verleerde vorm van maatschappelijke betrokkenheid in watermanagement vereist. Participatie zoals we die kennen kan bewoners soms inspireren en mobiliseren, maar is niet altijd even effectief. Voor een diepgaande verandering in de manier waarop we denken over water, is er meer nodig. Dit project richt zich op hoe een overheidsinstantie nieuwe manieren van denken over water kan ondersteunen en faciliteren. Het uiteindelijke doel is het geven van een duidelijk advies over hoe bewoners en andere belanghebbenden betrokken kunnen worden bij waterbeheer voor een toekomst waarin we op duurzame wijze kunnen omgaan met droogte en intens natte periodes.

Wie is de opdrachtgever?
Natuur en Milieufederatie Drenthe en Stichting Natuurbelang De Onlanden hebben mij gevraagd om deel te nemen aan het project ‘Van Veen tot Zee’. Hierin word ik begeleid door de faculteit Ruimtelijke Wetenschappen van de Rijksuniversiteit Groningen. Meer informatie over beide vindt u op https://www.nmfdrenthe.nl/ en
https://www.deonlanden.nl/. U kunt voor vragen over de begeleiding vanuit de faculteit en de opdrachtgevers ook bij mijzelf terecht.

Wat vraag ik van u?
Deelname aan een interview van ongeveer anderhalf uur. In dit interview vraag ik u naar uw ervaringen omtrent het thema betrokkenheid en participatie in watermanagement en uw reflecties hierop. Mijn onderzoek is verkennend van aard; met dit onderzoek willen we een eerste beeld schetsen.

Op basis van mijn rapport kunnen de opdrachtgevers voortborduren met een uitgebreider onderzoek. Omdat het om een verkennend onderzoek gaat, ben ik vooral op zoek naar uw perspectief. U hoeft zich niet voor te bereiden op ons gesprek. Ik vraag niet van u om onder uw naam uitspraken te doen, u kunt zo anoniem als mogelijk blijven. Als ervaringsdeskundige en betrokkene bij het waterbeleid in de regio ben ik benieuwd hoe u de dynamiek van het beleidsproces ervaart en hebt ervaren.

Wat zijn volgens u de mogelijkheden, valkuilen, gevoeligheden en onmogelijkheden bij het betrekken, mobiliseren en gezamenlijk optrekken met individuele bewoners, bedrijven, overheden, en burgerinitiatieven binnen het regionale watermanagement?

Mijn idee is om in gesprek te gaan met beleidsmedewerkers of -adviseurs van de gemeenten Tynaarlo en Noordenveld, en van het waterschap Noorderzijlvest, over dit onderwerp. Op die manier hoop ik mijn beeldvorming te verdiepen en data te verzamelen voor mijn onderzoek. Voor de latere analyse van het interview, afhankelijk van of u dat onprettig vindt, wil ik de audio van het interview graag opnemen.

Afbeelding 1. *Onderzoeksgebied Stroomdal Eelder- en Peizerdiep*

Welke gegevens verzamel ik?
Ik verzamel tijdens dit onderzoek:

- Een geluidsopname van het interview en een uitgeschreven verslag daarvan.
- De aantekeningen die ik maak tijdens het interview.

Bovenstaande gegevens worden alleen gebruikt voor het onderzoek “Betrokkenheid in watermanagement in het Eelder- en Peizerdiepgebied” en niet gedeeld met de opdrachtgevers, zij ontvangen enkel het eindrapport met de bevindingen.

Hoe bescherm ik de interviewresultaten?

- Alle gegevens worden opgeslagen op beveiligde servers van Rijksuniversiteit Groningen.
- Uw persoonlijke gegevens worden alleen bekeken en gebruikt mijzelf.
- U behoudt de kans om gedeeltes of het geheel van de onderzoeksresultaten te laten schrappen voordat deze gedeeld worden met de opdrachtgevers.
- De audio-opnamen van dit interview worden veilig en intern verwerkt met de softwareprogramma's die lokaal worden gehost op de server van de universiteit, zodat de gegevens de universiteit nooit verlaten.
- Ik bewaar interviewresultaten, zoals het audiobestand, digitale aantekeningen en transcripten van het interview, totdat er een geanonimiseerd transcript en geanonimiseerd verslag is gemaakt, op de beveiligde servers van Rijksuniversiteit Groningen.
- Als uw gegevens verzonden worden, dan gebeurt dit via de versleutelde software SURFfilesender.

Wat gebeurt er met de interviewresultaten na het onderzoek?

- Resultaten van de gesprekken worden verwerkt tot een rapport waarin ik zorg draag dat uw gegevens dermate vertrouwelijk worden gemaakt dat individuele personen niet herkenbaar zijn. Dit rapport wordt gedeeld met de begeleiding vanuit de Rijksuniversiteit Groningen en de opdrachtgevers.
- Wanneer de interviewresultaten geanonimiseerd zijn, worden alle niet-geanonimiseerde bestanden verwijderd. Deze zullen hoogstens tot een maand na het interview bewaard blijven op de beveiligde servers van Rijksuniversiteit Groningen.
- Uw gegevens worden alleen gebruikt voor de onderzoeksdoelen van het onderzoek “Betrokkenheid in watermanagement in het Eelder- en Peizerdiepgebied”.

Wat zijn uw rechten?

- Meedoen aan dit onderzoek is vrijwillig. U mag op elk moment stoppen, zonder dat u een reden hoeft te geven.
- U kunt uw gegevens inzien, verbeteren of laten verwijderen door contact op te nemen met Casper Klooster.
- Als u stopt met deelname, verwijderen wij uw gegevens op uw verzoek volledig, tenzij deze al anoniem verwerkt zijn.

U heeft altijd het recht om een klacht in te dienen bij de Autoriteit Persoonsgegevens als u vindt dat er niet goed wordt omgegaan met uw privacy.

Heeft u vragen of wilt u stoppen met meedoen?

Neem contact op met: Casper Klooster

- E-mail: c.m.klooster.1@student.rug.nl
- Telefoon: 06 40395254

Toestemmingsverklaring

Ik verklaar hierbij dat ik:

- de uitleg over het onderzoek heb gelezen en begrijp;
- vrijwillig meedoe aan dit onderzoek;
- begrijp wat er met mijn gegevens gebeurt en wat mijn rechten zijn;
- weet dat ik altijd mag weigeren een vraag te beantwoorden of mag stoppen zonder een reden op te geven.

Toestemming voor gebruik van de interviewresultaten:

Naam deelnemer: .....

Naam organisatie (optioneel): .....

Handtekening deelnemer: ..... Datum: .....

Naam onderzoeker: .....

Handtekening onderzoeker: ..... Datum: .....

Appendix E: List of Places in the Peizerdiep area

Cities:

- Assen
- Groningen

Villages:

- Smilde (municipality of Middle Drenthe)
- Bovensmilde (municipality of Middle Drenthe)

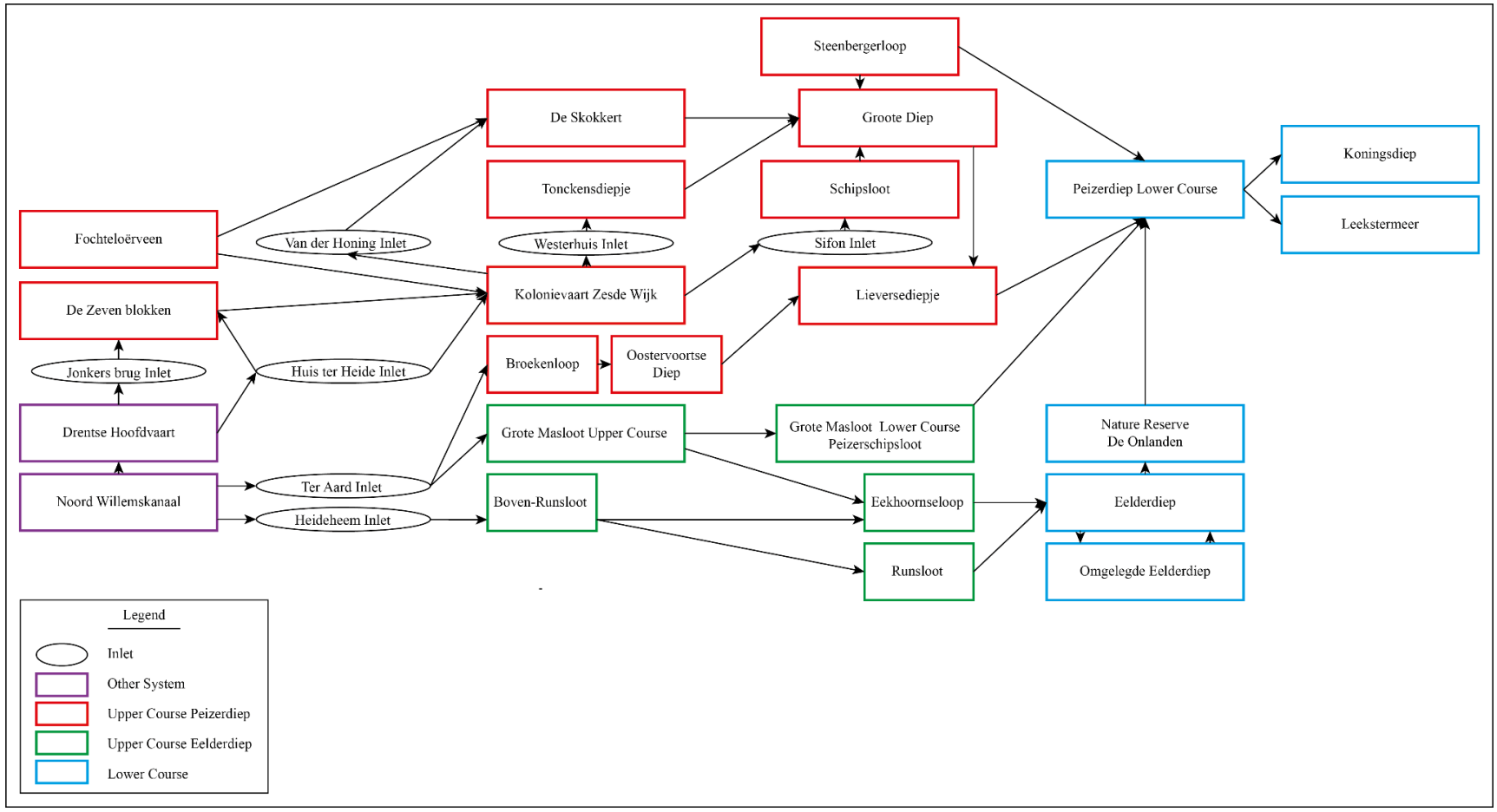
- Eelde-Paterswolde (municipality of Tynaarlo)
- Vries (municipality of Tynaarlo)
- Eelderwolde (municipality of Tynaarlo)
- Yde-De Punt (municipality of Tynaarlo)
- Zeijen (municipality of Tynaarlo)
- Donderen (municipality of Tynaarlo)
- Bunne (municipality of Tynaarlo)
- Winde (municipality of Tynaarlo)

- Altena (municipality of Noordenveld)
- Alteveer (municipality of Noordenveld)
- Een (municipality of Noordenveld)
- Een-West (municipality of Noordenveld)
- Foxwolde (municipality of Noordenveld)
- Huis ter Heide (municipality of Noordenveld)
- Langelo (municipality of Noordenveld)
- Lieveren (municipality of Noordenveld)
- Leutingewolde (municipality of Noordenveld)
- Matsloot (municipality of Noordenveld)
- Nietap (municipality of Noordenveld)
- Nieuw-Roden (municipality of Noordenveld)
- Norg (municipality of Noordenveld)
- Peest (municipality of Noordenveld)
- Peize (municipality of Noordenveld)
- Peizermade (municipality of Noordenveld)
- Peizerwold (municipality of Noordenveld)
- Roden (municipality of Noordenveld)
- Roderesch (municipality of Noordenveld)
- Roderwolde (municipality of Noordenveld)
- Sandebuur (municipality of Noordenveld)
- Steenbergen (municipality of Noordenveld)
- Terheijl (municipality of Noordenveld)
- Veenhuizen (municipality of Noordenveld)
- Westervelde (municipality of Noordenveld)
- Zuidvelde (municipality of Noordenveld)

Appendix F: Schematic Peizerdiep System

Figure F.1

Schematic of the main rivers and brooks in the Peizerdiep system. Modified from HaskoningDHV (2023)



Appendix G: Interview Guide

Introductievragen:

- Kun je je rol als beleidsadviseur water van de provincie drenthe kort beschrijven?
- Op welke manier zijn de rivieren, beken en kanalen in de Kop van Drenthe, dus bijvoorbeeld het het Groote diep, het Peizerdiep, Eelderdiep, de Runsloot, de Eekhoorsche Loop, de Grote Masloot en het Oostervoortsche Diep, relevant in je dagelijkse werk of de verantwoordelijkheden die bij je functie horen?
    - 10 minuten

Sectie 1. (River-as-Ecosociety)

Hoofdvraag 1.

Vanuit jouw positie als beleidsadviseur water, hoe zou je de verhoudingen tussen de bewoners van de grotere dorpen Roden, Eelde-Paterswolde en Vries met de rivieren, kanalen en beken door het gebied, beschrijven?

Mogelijke doorvragen:

- Hoe gebruiken of verhouden verschillende groepen bewoners zich tot de rivier?
- Wat valt je op of zijn er dingen in die verhoudingen en gebruiken die je hebben verrast?
- Of zorgwekkend zijn?
- Denkt u dat deze zulke verhoudingen verschillen voor de mensen die in de kleinere dorpen zoals Bunne aan de Eekhoornsche Loop, of Zije aan de Broekenloop en het Zijerwiekje wonen en werken in vergelijking met de bewoners van de grotere dorpen als Eelde-paterswolde of Vries?

Sectie 2. (River-as-Territory)

Hoofdvraag 2

Wanneer beslissingen worden gemaakt over waterstanden, zonering of infrastructuur in het Eelderdiepgebied, als je terugkijkt op dat soort processen, welke principes leiden deze keuzes dan?

Mogelijke doorvragen:

- Stel men vindt een water gerelateerd probleem, en er moet een oplossing gevonden worden. Wat beslist dan wat de prioriteiten zijn en hoe belangen tegen elkaar worden afgewogen?
- Wat is de rol van de gemeente, de provincie en Rijkswaterstaat?

- Hoe wordt er dan gekeken naar tot op welke hoogte uiteenlopende perspectieven, bijvoorbeeld, die van een water ingineur en een bewoner van Zijen die lid is van extinction rebellion, het best verwerkt kunnen worden in beleid of uitvoering daarvan?
- Kan je je een voorbeeld herinneren van botsende perspectieven of kennis?

Sectie 3 (River-as-Subject)

Hoofdvraag 4

Als beleidsadviseur water, op welke manieren stel je vast wat de meest toepasselijke rol van bewoners in een project of een sub-onderdeel van een project, bijvoorbeeld als stakeholders, gebruikers, partners, klant, burger of als iets anders?

Mogelijke doorvragen:

- Wat voor verantwoordelijkheden hebben bewoners?
- Wat is een goede mate van invloed in watermanagement in dit gebied voor deze betrokkenen?
- Zijn de verwachtingen over bewoners veranderd?
- Wat maakt betrokkenheid van bewoners succesvol of moeilijk?

Hoofdvraag 5

Als je persoonlijk kijkt naar de rivier in dit gebied, hoe zou je die beschrijven?

- Zie je de rivier vooral als iets dat beheerd moet worden, als een leefomgeving, of op een andere manier?
- Bestaat er in beleid aandacht voor de belangen van natuur of het watersysteem zelf?

Sectie 4. (River-as-Movement)

Hoofdvraag 6

Zijn er bewonersgroepen of initiatieven die invloed hebben gehad op waterbeleid in het gebied?

Mogelijke doorvragen

- Hoe verloopt de samenwerking met zulke groepen?
- Dragen zij bij als partners of eerder als kritische tegenkracht?
- Ontstaan hier innovaties uit?
- Zie je verschil tussen lokale initiatieven en grotere bewegingen?

Hoofdvraag 7 (Afsluitend)

Zijn er belangrijke dingen in de betrokkenheid van bewoners en andere betrokkenen in watermanagement die we niet behandeld hebben?

Naar de toekomst kijkend, hoe denk je dat de governance van het Eelderdiepgebied zal veranderen?

Deze blik in de toekomst wil ik graag vasthouden!

Sectie 5: Scenario-building exercise:

Ik wil graag een korte toekomstgerichte inbeeldings oefening doen.
Het doel is om creatief na te denken over hoe de toekomst van water management er in het Peizer en Eelderdiepgebied zich kan ontwikkelen onder toenemende druk.

- Er zijn geen goede of foute antwoorden, het gaat puur om jouw professionele inschatting en persoonlijke inbeelding.

Stel je voor:

- Het is 2076. Het krijgt Peizerdiepgebied herhalend te maken krijgt met grote droogtes en overstromingen.
- De druk op het watersysteem als bron, middel en pakket aan ecologische diensten, is ontzettend vergroot; De druk op watergebruik en het landschap is duidelijk toegenomen.
- Tegelijkertijd zijn er vanuit groepen bewoners, boeren en natuurorganisaties geluiden die vragen om een nieuwe aanpak in watermanagment; het moet anders.

Tijd: Misschien is het leuk om heeeeel snel even het gebied door te gaan aan de hand van wat fototjes

Verbeelding:

1. In deze toekomst, hoe verwacht je dat het watermanagement in dit gebied er dan uit ziet?
2. Wat is er volgens jou het meest veranderd ten opzichte van nu?
3. Wat valt meteen op als je door het gebied loopt?

Actoren:

- Wie spelen in deze toekomst een belangrijke rol in watermanagement?
- Zijn er denk je nieuwe rollen of verantwoordelijkheden ontwikkeld of ontstaan?

Besluitvorming:

- Hoe worden in deze toekomst beslissingen genomen over water?
- Wat voor waarden wegen het zwaarst mee?

Praktische consequencies

- Wat betekent deze toekomst voor hoe beleid wordt gemaakt?
- Wat zou er concreet anders moeten in instrumenten of aanpak?

Terugredeneren:

- Wat zou er vanaf vandaag moeten veranderen om richting deze toekomst te bewegen?
- Wat zijn de grootste barrières om daar te komen, Waar liggen volgens jou kansen?

Aanname:

- Stel dat er in deze toekomst ook meer druk komt om water en ruimte anders te verdelen, bijvoorbeeld tussen landbouw, natuur en wonen.
    - Hoe zou dat proces eruitzien? Wie wint of verliest daarin? Wat maakt dat acceptabel of niet?

Afsluiting: Ontzettend bedankt voor de deelname wil je nog iets benoemen voor ik de opname stopzet?

Stop opname: Heb je, nu de opname gestopt is nog vragen, op-, of aanmerkingen? Ter herrinnering, ik gebruik de resultaten van dit interview in mijn raport. Deze stuur ik voor het delen met mijn begeleider en mijn opdrachtgevers naar je op, zodat je de kans krijgt om het stuk te lezen, uitspraken terug te nemen of te corrigeren, of delen of het geheel van je deelname weg te nemen.

Appendix H: Reflections Diary

H.1 Meeting Log

IRT Logbook			
Date	Activity/Summary (max 100 words)	Outcome	Hours
27/10/2025	During this meeting, Elen and I (re-)oriented and aligned our view on the project. Additionally, we agreed on the research's thematic focus. Seeing as our previous point of contact for the 'client'/partner of the project has dropped out, we spoke of how to approach this. Additionally, I proposed a schedule for the project's duration. We agreed that this schedule will serve as a guide, not a concrete or compulsory one.	Project planning.	1
01/12/2025	During this meeting, Elen and I reoriented the research description from a thematic focus to a methodological focus. I proposed a structure for my literature research using the search terms 'riverhood' and 'river commoning', and an interview methodology. Additionally, I proposed focusing the research more on the professional domain of river management and less on the vernacular movements and citizens in the Peizerdieparea. This is fine, but since we are in contact with NMFD and SNDO, it makes sense to include their perspectives. We have left it open for now and will get back to this at a later stage.	Agreements made about the Learning Agreement, and further narrowing the research.	1
08/01/2026	During this meeting, Elen and I discussed my progression on the literature review and project planning. Due to the end of the block and the deadlines ahead, we agreed that I would pick up where I left the project after the deadlines around the 24th of Januari.	Agreements made about planning, structure & scope of the literature review.	1
26/02/2026	During this meeting, Elen and I reviewed the finished literature review and discussed how to move forward with the interviews. We discussed the possible interview methodology of a imagination driven scenario building exercise. We agreed that first the interview guide for the general interview should be completed before we move to the development of additional methodologies.	Agreements made about planning and the interview methodology.	1.5
04/03/2026	During this meeting, Elen, NMFD, and I discussed how to best shape the interview and literature review results into a product that best serves the project's purpose, and how the project can produce a product that is useful for NMFD and De Onlanden. We landed on 4 researsch questions that I am to produce for the students that are gonna pick up where I leave off.	Agreements made about planning and the presentation for NMFD and NDO.	1.5
10/03/2026	After the presentation, Elen and I discussed the progress of the project. I asked some content related questions.	Reaffermation on the project's progress.	0.5
07/04/2026	Elen was present at the presentation and following work session. After the presentation at NMFD, Elen and I discussed the progress of the project. I had some questions about how I should frame my findings, Elen provided some ideas.	Answers to content related questions.	1

H.1 Hour Log

280 hours.

H.2 List of Performed Tasks

- Keeping up with the logbook.
- Small literature review on Riverhood and River Commoning.
- Case study of water management in the Kop van Drenthe.
- Producing an interview guide.
- Producing an interview information and permission form.
- Construction of coding procedures.
- Collection of primary interviewing data.
- Analysis of the collected data in Atlas.ti.
- Project presentation to NMFD, NDO, some FSS faculty members, and students.
- Writing of the report.

H.3 Reflection

This was a super fun project for which I tried very very hard. I wanted to make as much use as possible of the freedom within this project to connect with the working field, which, thanks to the help and network of Elen, Niels, Remco, Rudgerd, and Jerry, became a big success. I think I have gained a better understanding of how government actors, civil organisations, and, for instance, farmers interact to shape water management in the region. The biggest challenge, aside this tedious (though understandable) logbook requirement, was to get everything done in time. Nevertheless, I think I succeeded in putting together a pretty neat report. It probably has many flaws that, if I'd given myself some more space by narrowing its scope, I could have fixed before the deadline, but I'm fairly satisfied with it. The strategic coping mechanism with the workload I had set myself up with, was a good dose of enjoying the actual process and drinking enough water. Asking my friend and colleague Hein for a famous Hein brain child every once in a while helped a lot as well.