



RIDING THE WAVES

EXPLORING STABILITY AND CHANGE IN DUTCH WATER SAFETY POLICY (2004 – 2024)

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Nederlandse Samenvatting

Achtergrond

De hedendaagse samenleving wordt wereldwijd geconfronteerd met aanzienlijke uitdagingen zoals sociale ongelijkheid en economische instabiliteit, die worden verergerd door de klimaatcrisis. Hoewel het mondiale Zuiden het zwaarst lijden onder de gevolgen van klimaatverandering worden ook welvarende landen zoals Nederland in toenemende mate getroffen. Deze studie onderzoekt beleidsstabiliteit en -verandering binnen het waterveiligheidsbeleid-systeem in Nederland in de context van deze urgente vraagstukken, waarbij ook de invloed van neoliberale beleidsmaatregelen en ideeën op openbaar bestuur en beleidsontwikkeling in de afgelopen decennia werd onderzocht.

Methode

Deze studie was primair verkennend van aard en richtte zich op het in kaart brengen van de ontwikkeling van het beleid en de coalities binnen het Nederlandse waterveiligheidsbeleid-systeem over een periode van twintig jaar (2004–2024), als vervolg op het werk van Sander Meijerink (2005). Daarbij wordt gebruik gemaakt van het Advocacy Coalition Framework. De dataverzameling bestond uit 1) de analyse van beleidsdocumenten en 2) het afnemen van semigestructureerde expertinterviews. De data-analyse bestond uit een thematische analyse, waarbij gebruik werd gemaakt van een combinatie van inductieve en deductieve methoden.

Resultaten

De resultaten van deze studie geven aan dat er tussen 2004 en 2024 aanzienlijke stabiliteit was binnen het Nederlandse waterveiligheidsbeleid-systeem, omdat waterveiligheid nog altijd een kerntaak van de overheid is, en in de praktijk blijkt dat technische oplossingen, zoals het versterken van primaire waterkeringen, nog steeds de voorkeur krijgen om waterveiligheid in Nederland te waarborgen. Desondanks werden er nieuwe Nederlandse waterveiligheidsmaatregelen ontwikkeld waarbij een geïntegreerde, gelaagde benadering van waterveiligheid werd toegepast in plaats van een puur technische focus op overstromingsbescherming. Dit heeft te maken met de invloed van klimaatverandering, wat een existentiële dreiging vormt voor Nederland als kustdelta-land, op het waterveiligheidsbeleid. In tegenstelling tot klimaatverandering heeft neoliberalisme minder directe invloed gehad op beleidsontwikkeling, aangezien de zorgplicht van de overheid privatisering beperkt. Decentralisatie heeft echter invloed gehad op de beleidsimplementatie door het herverdelen van verantwoordelijkheden, de vertroebeling van verantwoordelijkheden, het verzwakken van centrale coördinatie, wat een kloof heeft gecreëerd tussen beleidsontwikkeling en uitvoering en de geïntegreerde aanpak ondermijnt heeft. Deze studie toont ook aan dat de belangrijkste belangencoalities die door Meijerink (2005) zijn geïdentificeerd - de Waterveiligheidscoalitie en de Milieucoalitie - nog steeds bestaan, omdat hun thema's relevant gebleven zijn. Ondertussen hebben nieuwe maatschappelijke vraagstukken, zoals economische zorgen als gevolg van klimaatverandering en ruimtelijke ordeningsdebatten, geleid tot de opkomst van twee nieuwe coalities.

Conclusie

Deze studie sluit aan bij eerder onderzoek naar de invloed van neoliberalisme en klimaatverandering op het Nederlandse waterveiligheidsbeleid. Hoewel privatisering beperkte invloed heeft gehad, heeft decentralisatie het bestuur in de waterveiligheidssector versnipperd, waardoor de verantwoordelijkheid voor beleidsimplementatie naar regionale autoriteiten is verschoven. Klimaatverandering is geïdentificeerd als een belangrijke factor in beleidsverandering, wat heeft geleid tot de integratie van ruimtelijke kwaliteit in het waterveiligheidsbeleid. Politieke weerstand, maatschappelijke onzekerheid en bestuurlijke uitdagingen hebben echter verdere integratie van klimaatadaptatie (inclusief ruimtelijke ordening) als een fundamenteel onderdeel van het Nederlandse waterveiligheidsbeleid belemmerd. Deze studie suggereert dat actieve coördinatie, samenwerking tussen sectoren, en een meer gecentraliseerde aanpak mogelijk nodig zijn om langdurige waterveiligheid in Nederland te waarborgen.

Abstract

Background

Contemporary society faces significant global challenges, including social inequality and economic instability, which are exacerbated by the climate crisis. While the Global South has endured the bulk of climate change impacts, wealthier nations like the Netherlands are increasingly affected. This study explores policy stability and change in the water safety policy subsystem in the Netherlands in the context of these pressing issues, taking into account the influence of neoliberalist policies and ideas on public administration and public policy development in recent decades.

Methods

This study is primarily exploratory in nature, aiming to trace the development of policy and advocacy coalitions in the Dutch water safety policy subsystem over a twenty-year period (2004–2024), using the work of Sander Meijerink (2005) as a foundational reference for a case study approach within the Advocacy Coalition Framework. Data collection involved the analysis of policy documents as well as conducting semi-structured expert interviews. The data analysis process involved a combination of inductive and deductive approaches, using thematic analysis.

Results

The results of this study indicate that there was notable stability in the Dutch water safety policy subsystem between 2004 and 2024, as water safety remained a core governmental responsibility, and in practice, technical solutions like reinforcing primary flood defences are still heavily favoured for ensuring water safety in the Netherlands. Still, new Dutch water safety policies were developed, using an integrated, multi-layered approach to water safety rather than a purely technical flood protection focus. This is large due to the fact that climate change has increasingly shaped water safety policy as it poses an existential threat to the Netherlands as a coastal delta country. In contrast, neoliberalism has had less direct influence on policy development, as the government's duty of care limits privatization. However, decentralization has affected policy implementation by redistributing responsibilities, obscuring accountability, weakening coordination, and creating a disconnect between policy development and execution, undermining an integrated approach. This study also shows that the main advocacy coalitions identified by Meijerink (2005) - the Water Safety Coalition and the Environmental Coalition - still exist, as their issues remain relevant to the policy subsystem. Meanwhile, the framing of new policy issues, such as economic concerns resulting from climate change and land use value discussions due to spatial planning debates, has led to the emergence of two new coalitions.

Conclusion

This study aligns with previous research on the impact of neoliberalism and climate change on Dutch water safety policy. While privatization has had limited influence, decentralization has fragmented governance, shifting policy implementation responsibilities to regional authorities. Climate change has been identified a major factor in policy change, which lead to the integration of spatial quality in water safety policy. However, political resistance, societal uncertainty, and governance challenges have hindered further integration of climate adaptation, including spatial planning, as a fundamental part of Dutch water safety policy. This study suggests there might a need for active coordination, cross-sector collaboration, and a more centralized approach, in order to ensure long-term water safety in the Netherlands.

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1. Introduction

“Without natural resources life itself is impossible. From birth to death, natural resources, transformed for human use, feed, clothe, shelter, and transport us. Upon them we depend for every material necessity, comfort, convenience, and protection in our lives. Without abundant resources prosperity is out of reach.” (Gifford Pinchot, 1947)

1.1 Context

Our contemporary society is going through a period of significant global challenges, including social inequality, economic instability, and political tensions (Jalles, 2024; Rodríguez-Pose et al., 2023; Rodrik, 2021). The climate crisis exacerbates these challenges by triggering more frequent and severe weather events like droughts and floods, accelerating temperature rises, and contributing to biodiversity loss (Cook et al., 2018; Habibullah et al., 2022; Seneviratne et al., 2021; Walsh et al., 2020). These effects intensify the scarcity of vital natural resources, especially fresh water, which escalates conflicts and causes mass migration (Kaczan & Orgill-Meyer, 2020; Koubi, 2019; von Uexkull & Buhaug, 2021).

While the Global South has endured most of the climate change impacts for decades (Ngcamu, 2023), wealthier countries like the Netherlands are now also experiencing its effects. Changing weather patterns (i.e. heat waves, droughts, storms), rising sea levels, and shifts in biodiversity are becoming more noticeable (Dupuy et al., 2020; Fischer et al., 2020; Pilotto et al., 2020; Vacek et al., 2023; Weilhammer et al., 2021). Approximately fifty years after the landmark 1972 report *Limits to Growth* by the Club of Rome brought climate change into the collective consciousness and onto the political agenda, the urgency of this issue is clearly reflected in recent water management policies in the Netherlands (Bloemen et al., 2019; Ritzema & Van Loon-Steensma, 2018). Unfortunately, predictions indicate that the situation will only worsen, making it imperative to act and prepare for the anticipated consequences (Grafakos et al., 2020; Haasnoot et al., 2024; Masson-Delmotte et al., 2021).

In times like these, citizens, Dutch and otherwise, depend for a large part on their government and, in turn, on good governance to ensure their well-being and invest in a sustainable, liveable future. This reliance on government exemplifies the social contract theory by Rousseau (Gourevitch, 2018), where civil society delegates authority to the government in exchange for protection and service. Such social contracts are not static but evolve over time and can even undergo major paradigm shifts during crises or periods of significant societal and political change (Adger et al., 2012; Gourevitch, 2018).

One example of political change and changing relations between government, citizens and the private sector is the emergence of neoliberalism as a mainstream political ideology in the late 20th century. Classical liberalism, which has been around since the 18th century, is an ideology that emphasizes individual freedom (i.e. freedom of speech, press, religion, and association) and the protection of natural rights (i.e. the right to life, liberty, and property), and advocates for minimal state intervention in personal and economic matters (Van De Haar, 2023). Neoliberalism builds on these classical liberal principles but emphasizes the importance of free markets and competition as the primary drivers of economic growth, and advocates for deregulation, privatization of state-owned enterprises, and reduced government spending on social programs (Ganti, 2014). While both classical and neoliberalism advocate for minimal state intervention and emphasise the efficiency of markets over state control, neoliberalism differs from classical liberalism in the belief that a strong state and coordinated political effort are necessary to bring about market-like reforms in every aspect of society, aiming to redefine the functions of the state rather than eliminate it entirely (Ganti, 2014; Van De Haar, 2023).

The global ascent of neoliberalism in the 1980s is illustrated by the leadership of Margaret Thatcher in the UK and Ronald Reagan in the US. In the Netherlands, the emergence of neoliberalism was similarly reflected in the policies of Prime Minister Ruud Lubbers (Oudenampsen, 2020). Taking office in 1982, Lubbers aimed to grow the economy by reducing barriers for producers through supply-side economic policies, such as wage moderation, deregulation, tax cuts, and welfare state retrenchment. These policies resulted in a substantial redefinition of governmental agencies' roles in public service delivery, including privatization and the adoption of decentralized management practices, to reduce bureaucratic inefficiencies, limit government spending, stimulate domestic industries, and promote the development of internationally competitive publicly owned companies (de Rooy, 2015; Oudenampsen, 2020; Van De Haar, 2023). For example, Rijkswaterstaat, the government agency responsible for the management of the national waterway systems and (dry) infrastructure, had to contend with various cutbacks and efficiency operations in the 1980s and 1990s, which led to several reorganizations and an increase contracting out different tasks and responsibilities to private companies (van den Brink, 2021).

Since then, (neo)liberalism, as one of the dominant political ideologies in the Western world, has had far-reaching influence on the political and policy domain, as well as on policy-shaping processes - for example by emphasizing freedom of competing ideas, which creates a need for expertise as a basis for decision making (King, 1999), as well as introducing a greater measure of responsibility for citizens (Stewart, 1993). The effect of neoliberalism on the management on public and natural resources can be observed on a global scale - privatization, reducing government spending, introduction of competition and market forces have been introduced to these traditionally state-run sectors (Bhattacharjee et al., 2023; Caglar & Ulug, 2022; Godoy et al., 2005; Keohane, 2012).

These developments have led to concerns among activists and researchers, particularly regarding the efficacy of neoliberal policies in addressing urgent environmental challenges (Fieldman, 2011; Fremstad & Paul, 2022). For example, weak regulatory frameworks, a hallmark of neoliberalism, can undermine environmental protection, making it more challenging to implement effective climate policies and enforce compliance with environmental standards (Andrew et al., 2010; Fieldman, 2011; Fremstad & Paul, 2022). Furthermore, the neoliberalist focus on free markets complicates efforts to combat climate change, because it prioritizes immediate economic growth and efficiency over long-term investments in sustainable practices and technologies, (Fieldman, 2011). Relying on market mechanisms to address environmental issues is also potentially dangerous because market failures, such as externalities and the undervaluation of public goods, can prevent efficient or equitable solutions to environmental degradation (Battocletti et al., 2024; Fremstad & Paul, 2022).

1.2 Problem statement

Several decades after the emergence of neoliberalism as a mainstream political movement and the subsequent reforms, it is essential to reflect on their effects on the public and natural resource management and the policy guiding it, especially in the context of environmental trends like the increasing impact of climate change. Although neoliberalism as a socio-political trend has been studied extensively, its specific effects on public and natural resource management in the Netherlands remain largely unexplored, except for one study about neo-liberal transitions in nature policies (Kamphorst & Coninx, 2016). Given the country's geographical vulnerability as a river delta, with significant areas lying below sea level, it is especially relevant to study the effects and interplay of socio-political trends (e.g. the emergence of neoliberalism), and environmental trends (e.g. climate change) and policy trends on policy, policy development and the corresponding processes related to flood protection and water safety management, as developments in this field might impact the long-term viability of human habitation in the delta. In other words, these trends and their influence raise existential questions about the future of the Netherlands—can the country continue to safeguard itself against rising sea

levels and extreme weather events, and will it remain a liveable and sustainable place in the coming centuries?

1.3 Research aim

This study aims to evaluate explore the effects of neoliberalist ideology on natural and public resource management, by investigating policy stability and change in the water sector in the Netherlands, with a focus on water safety policy specifically.

1.4 Outline

Chapter 1 of this report introduces the research context and established the research aims and objectives guiding the study. Chapter 2 provides the theoretical foundation underpinning the formulation of the research questions for this study, as well as the exposition of the case study. Chapter 3 presents the used methodology used, outlining the research design, data collection methods, and data analysis. Finally, Chapter 4 presents the results and establishes the foundation for answering and discussing the research questions in Chapter 5.

2. Theoretical framework

Policies related to natural resource management tend to be stable because they are based on long-term goals and institutional frameworks that require consistent strategies, and they are often controlled by established groups with strong beliefs that resist change (Sotirov & Memmler, 2012). Thus, the influence of neoliberalist thinking on these policies is best investigated by focusing on moments of chance, and the processes underlying policy change. The Advocacy Coalition Framework (ACF) offers a comprehensive and nuanced lens through which to analyze policy stability and change. In this Chapter, we make use of the publications by Sotirov and Winkel (2016), Pierce et al. (2017), Jenkins-Smith et al. (2018) and Hornung and Bandelow (2022) to briefly define some important terms in the ACF (i.e. Policy Subsystem, Advocacy Coalition, Belief, Policy-Oriented Learning) as well as explain the process underlying policy change and stability according to the ACF. To better contextualize current case study, we will also present the key findings by Meijerink (2005), who analyzed Dutch coastal flooding policy between 1945 and 2003 using the ACF, after which the research questions for this study are formulated.

2.1 Advocacy Coalition Framework

The Advocacy Coalition Framework (ACF) is a theoretical model that explains how different groups of actors with shared beliefs and interests (i.e. coalitions) collaborate and compete over time to influence policy processes and outcomes within specific policy subsystems. It was first developed by Paul Sabatier and Hank Jenkins-Smith in the early 1980's with intent of creating a new theoretical framework that could surpass some of what these scholars labelled "traditional" approaches, with a focus on exploring and understanding policy change and stability over time (Jenkins-Smith et al., 2018). The ACF has been applied extensively, with hundreds of studies using it as a theoretical framework for analyzing policy change, establishing its credibility (Pierce et al., 2017; Weible et al., 2009). The framework's versatility is shown in its ability to connect micro-level, individual beliefs and actions, with macro-level institutional, political and policy processes, i.e. highlighting and connecting the complexity and humanity in policy processes, offering a more holistic view of how policy changes and remains stable over time.

2.1.1 Policy Subsystems

A policy subsystem is a fundamental analytical unit for studying policy processes and are delineated by: "policy topic, territorial scope, and the actors directly or indirectly influencing policy subsystem affairs" (Jenkins-Smith et al., 2018; Meijerink, 2005). In other words, the concept focuses on those actively engaged in shaping policy outcomes related to a particular issue and a specific territorial scope. Sotirov & Winkel (2016) describe policy subsystems as "arena[s] of interactions amongst advocacy coalitions" (Sotirov & Winkel, 2016). These subsystems can overlap with or be embedded within others and may experience stability or change based on the interactions among actors involved, and between actors and external factor (Jenkins-Smith et al., 2018) see 2.1.6 Overview for a visual overview of the ACF concepts and their interactions.

2.1.2 Advocacy Coalitions

Advocacy coalitions are groups formed by individuals or organizations that share common normative and ontological (core) beliefs and work together to influence public policy within a specific policy subsystem. These coalitions unite around shared interests, values, or goals, i.e. shared (policy core) beliefs, engaging in coordinated efforts to promote their agenda and advocate for particular policies while challenging opposing coalitions (Jenkins-Smith et al., 2018; Weible et al., 2020). Coalition building is the process through which actors come together to form advocacy coalitions, often involving negotiation, compromise, and strategic communication (Sotirov & Winkel, 2016). While coalitions are

generally expected to remain relatively stable over time, held together by core beliefs, they are also inherently dynamic in nature to some degree; new members may join, and existing members may leave in response to shifting circumstances such as changes in public opinion, political leadership, or external events.

Strategic alliances are temporary collaborations between different advocacy coalitions that may form one to achieve a common goal, especially in response to external events or threats, while they do not necessarily share policy core (or deep core) beliefs (Meijerink, 2005). There is dispute amongst scholars how to exactly define advocacy coalitions, and as such alternative labels have proposed, such as “discourse coalitions” or “belief coalitions” (Weible et al., 2020). Recent work on coalitions within the ACF suggests that observed stability and change are context- and research-dependent, influenced by the frequency and closeness of observation, the chosen focus, and the study’s duration (Weible et al., 2020). Given these complexities, the stability and evolution of coalitions and coalition structures have emerged as key areas for future research within the ACF framework (Jenkins-Smith et al., 2018; Sotirov & Winkel, 2016; Weible et al., 2020).

Advocacy coalitions play a crucial role in driving policy change. They mobilize support, frame issues, and leverage political opportunities to influence decision-making. Additionally, these coalitions often compete with one another for influence and resources, leading to shifts in policy as they adapt their strategies in response to their opponents. The interactions and relations between different advocacy coalitions, or interaction between actors internal to a coalition, (including competition, collaboration, and conflict) might be referred to as coalition dynamics.

2.1.3 Belief systems

Policy actors, as members of an advocacy coalition, are bound together by similar beliefs related to a specific policy issue (Jenkins-Smith et al., 2018; Sotirov & Winkel, 2016). These interconnected sets of beliefs held by coalition members, which guide their actions and strategies within the policy subsystem, are referred to as belief systems (Weible et al., 2020). Within the ACF, belief systems are divided into three, hierarchically structured layers or components:

- **Deep Core Beliefs:** Relatively stable, fundamental normative and ontological beliefs, which are less likely to change over time. These beliefs often relate to broader values and worldviews, often normative and ontological in nature, such as a belief in the inherent value of human life (making it worthy of protection against floods) or the view on whether humans are a part of nature.
- **Policy Core Beliefs:** Fundamental beliefs held by members of an advocacy coalition regarding the policy subsystem. These core policy beliefs guide the actions and strategies of coalition members while fostering coalition stability, as they are relatively resistant to change. Examples of Policy Core Beliefs that are relevant to the flooding policy in the Netherlands are ‘Government intervention is required for flood protection.’ or ‘Flood prevention should take priority over economic interests.’
- **Secondary Beliefs:** More specific beliefs that can change more readily than policy core beliefs. These beliefs are often about specific policy instruments or strategies. In the context of flooding policy, these could pertain to views about funds needing to be allocated to flood prevention projects vs. other public services, or preferences for specific strategies such as strengthening dykes vs. strategic retreat from floodplain areas (by discontinuing investments in some forms of economic development in those areas).

According to Sotirov & Winkel (2016), the ACF is limited by its relatively narrow focus on shared *policy core beliefs* among coalition members, which may overlook the deeper, more fundamental cultural biases that shape these beliefs, which means it does not fully incorporate the complexities of belief

systems and the role of cultural factors in policymaking. Therefore, they propose to combine the ACF with Cultural Theory (CT), a framework that identifies four main biases - hierarchism, egalitarianism, individualism, and fatalism - which shape individuals' views on governance and policy processes, reflecting different views on social order, collective responsibility, personal freedom, and their own potential for societal influence. The use of CT to measure deep normative core beliefs has proven useful in several studies, especially regarding environmental policy (Hornung & Bandelow, 2022).

In politically diverse countries with pluralistic party systems, deep core beliefs often manifest through partisanship, reflecting individuals' psychological attachment to political groups, which in turn shapes their values and policy preferences (Hornung & Bandelow, 2022). Partisanship may align with or diverge from cultural biases outlined by Cultural Theory (CT) and offers additional insight into the normative beliefs underlying policy preferences. For instance, in the Netherlands, the dominant political ideology of neoliberalism (Oudenampsen, 2020; Van De Haar, 2023) aligns most closely with the individualism bias of CT, emphasizing personal freedom, while also incorporating elements from hierarchism through support for rule-based governance, but generally opposing the pessimism inherent in fatalism.

2.1.4 Policy stability and change

Policy change refers to the alteration of existing policies and government programs or the introduction of new policies and government programs within a specific policy subsystem (Jenkins-Smith et al., 2018; Meijerink, 2005). This can involve changes in laws, regulations, programs, or practices that govern a policy subsystem (Shanahan et al., 2018). With policy change, a distinction is made between 'major policy change' and 'minor policy change'. Jenkins-Smith et al. (2018) define this distinction in the following way: "change in the core aspects, defined as "major policy change," indicates significant shifts in the direction or goals of the subsystem, whereas change in secondary aspects (e.g., change in means for achieving the goals) is evidence for "minor policy change"."

Several factors contribute to policy stability, including the dominance of powerful advocacy coalitions that resist challenges to their beliefs and subsequent policies, established institutional structures that favour the status quo, and strong public support for existing policies (Jenkins-Smith et al., 2018; Sotirov & Winkel, 2016). Additionally, deep core beliefs and the presence of veto players—individuals or groups whose agreement is necessary for policy change—can further entrench current policies (Jenkins-Smith et al., 2018). However, significant policy changes can happen in several ways. One possibility is that it emerges from internal events, such as crises, failures, and scandals. These events take place within the scope of the policy subsystem and are influenced by the policy actors within it. Framing contests between different coalitions over such events involve debates about the severity of issues, their root causes, the assignment of responsibility, and the implications for policy; promoting their own policy core beliefs as the better ones, while simultaneously questioning the effectiveness of the dominant coalition's policies (Jenkins-Smith et al., 2018).

Conversely, policy change can occur due to external shocks, otherwise known as "shock events" within in the ACF, such as economic crises or natural disasters like the 1953 North Sea flood (Dutch: Watersnoodramp), which disrupt existing policies and coalition dynamics, and shifts public opinion (Jenkins-Smith et al., 2018; Meijerink 2005). Furthermore, changes in societal values can create demands for new policies, prompting coalitions to adapt their strategies (Jenkins-Smith et al., 2018; Meijerink 2005). Active advocacy efforts by interest groups can raise awareness about certain issues and put pressure on policymakers to enact change. Over time, the dynamics between different coalitions change, as minority coalitions may gain support and challenge dominant ones (Meijerink, 2005). Finally, new information and experiences can lead coalitions to adjust or reaffirm their beliefs (i.e. policy learning), while shifts in political leadership can open doors for reform (Meijerink, 2005).

Within the ACF, there are several hypotheses about how policy change might be achieved. Weible and Nohrstedt (2012), as cited in Jenkins-Smith et al. (2018), offer a hypothesis which integrates the four original ones into one:

“Policy Change Hypothesis 1: Significant perturbations external to the subsystem, a significant perturbation internal to the subsystem, policy-oriented learning, negotiated agreement, or some combination thereof is a necessary, but not sufficient, source of change in the policy core attributes of a governmental program.”

Next to other broad academic support for this hypothesis (Jenkins-Smith et al., 2018), Meijerink (2005) found similar dynamics of policies change and stability when researching on these aspects in the Dutch flood protection and water management sector, emphasising incremental change in public opinion and coalition activity over long periods of time as preceding and ‘priming’ the circumstances for (seemingly quick and) radical policy change after a ‘shock events’. Whether or not the shock event leads to (major) policy change, depends on the same mechanisms for events internal and external to the policy subsystem (Jenkins-Smith et al., 2018)

While not as solidly supported as the first hypothesis, by a small number of studies confirming it, there is strong partial support for the second hypothesis, related to “coalition influence in the subsystem, major policy change, and nested subsystems” (Jenkins-Smith et al., 2018):

“Policy Change Hypothesis 2: The policy core attributes of a government program in a specific jurisdiction will not be significantly revised as long as the subsystem advocacy coalition that instated the program remains in power within that jurisdiction —except when the change is imposed by a hierarchically superior jurisdiction.”

This hypothesis is also reflected in the Meijerink (2005) paper, where one coalition is described to be dominant until a Cabinet (a hierarchically superior authority to that coalition) imposes the integration of ecological issues, next water safety issues, into flood protection and coastal management policy in the 1970s.

Another potential route towards policy change within the ACF is ‘policy-oriented learning’, or policy learning (Meijerink, 2005; Shanahan et al., 2018; Sotirov & Memmler, 2012), and is associated with “associated with changes in beliefs systems of coalition members” (Jenkins-Smith et al., 2018). It is the process by which actors in a policy domain acquire, share, and apply knowledge to frame and understand policy issues, shape policy preferences, and inform decision-making (Meijerink, 2005; Shanahan et al., 2018; Sotirov & Memmler, 2012). Learning can occur both individually and collectively, with actors exchanging insights within and potentially across coalitions and interacting with experts, which can influence their understanding of policy issues and can lead to shifts in beliefs and strategies based on new information and (Jenkins-Smith et al., 2018; Meijerink, 2005).

While through this process, actors may adapt their beliefs and strategies based on new information, i.e. adapting secondary aspects of their belief system, the deep core and policy core aspects of a belief system are believed to be resistant to change (Sotirov & Memmler, 2012). Meaning that, while policy learning and the subsequent adjustment of a belief systems’ secondary aspects are not likely to lead to major policy change on their own, they can contribute to incremental change within a policy subsystem over a longer period, thus influencing the conditions necessary for major policy change (Meijerink, 2005; Shanahan et al., 2018; Sotirov & Memmler, 2012).

Issues, or policy problems, that can be clearly defined, broken down, and effectively analysed, moderate levels of conflict as well as the existence of neutral, professional forums prestigious enough for opposing coalition to engage with, are named as conditions conducive to cross-coalition learning (Meijerink, 2005; Shanahan et al., 2018). In the context of the Advocacy Coalition Framework (ACF), though, it is important to note that new information and input are filtered and processed through the existing belief systems of advocacy coalitions. Rather than prompting a change in core beliefs, new information may often be interpreted in a way that reinforces the coalition's pre-existing ideas and policy positions.

2.1.5 Overview

Figure 1 shows an overview of concepts within the Advocacy Coalition Framework and their respective interactions, as adapted from Sabatier and Weible (2019) by Jenkins-Smith et al. (2018). The policy subsystem is shown in the rectangle on the right. Coalitions A and B are both comprised of actors with specific beliefs and resources. Both coalitions use various strategies to try to impact policy outcomes, by influencing government decisions. These decisions then influence both the policy subsystem and external subsystem events.

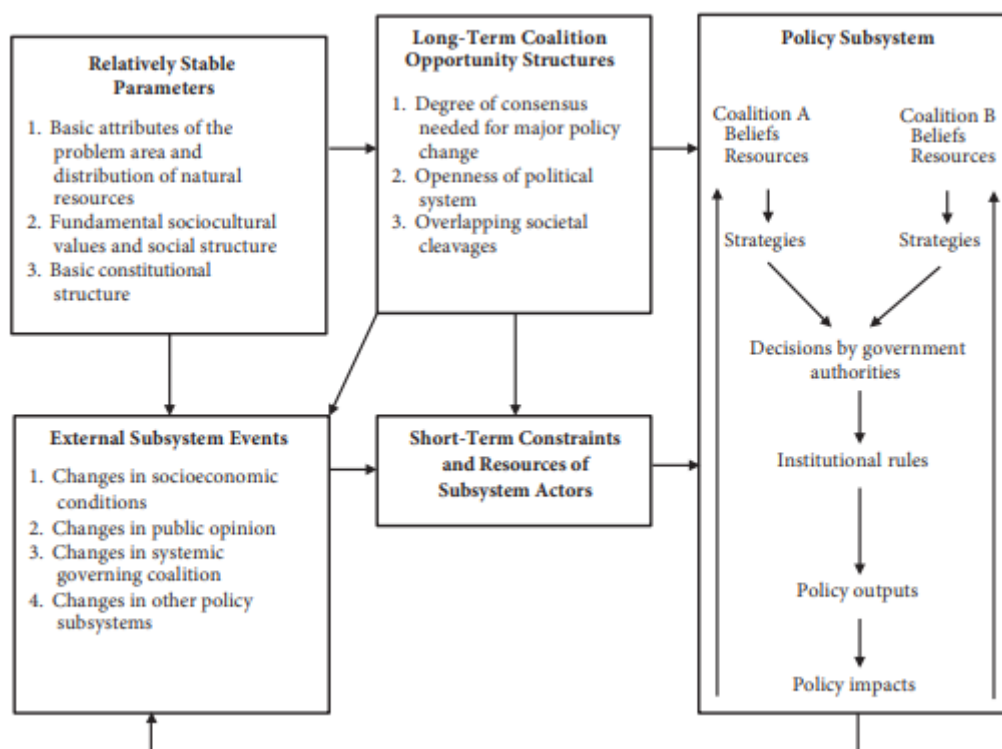


Figure 1. Advocacy coalition framework diagram. Source: Jenkins-Smith et al. (2018)

2.2 Case study

The policy stability and change in the Dutch coastal flood protection subsystem has previously been studied by Meijerink (2005) who analyzed coastal flooding policy in the Netherlands between 1945 and 2003 using the ACF. According to his work, external shocks to this policy subsystem on their own do not necessarily lead to major policy change, unless they converge with several other conditions conducive to major policy change, thus aligning with the Policy Change Hypothesis 1 as mentioned earlier. It took the successful reframing of the (dominant) policy issue by opposing advocacy coalitions, a long period of incremental change in public opinion and coalition activity, and external disruptions

such as the instalment of a new Cabinet to bring about a change in the power balance between different coalitions in the policy subsystem and disrupt the policy monopoly by one of those coalitions.

By framing the emergence of neoliberalism as an (external) shock event (see ‘changes in systemic governing coalition’, Figure 1), preceding long term incremental change (see ‘the diffusion and integration of fundamental sociocultural values and social structure’, Figure 1), this study can investigate its impact on policy changes within the Dutch water management sector, specifically the water safety policy subsystem.

Due to the identification of coastal protection policies in the Rhine and Rhine-Meuse-Scheldt deltas as a locked-in system, which restricts dynamic policy shifts (Santos & Dekker, 2020; van Buuren et al., 2016; van Staveren & van Tatenhove, 2016; Welch et al., 2017), this study will broaden its scope to examine the Dutch water safety policy sector as a whole rather than focusing exclusively on coastal flood protection and management. This expanded perspective puts more emphasis riverine flooding, flood protection, and management while still including coastal management as part of the overall water safety policy subsystem. In the Netherlands—a delta system with limited space—the policy subsystems of water safety, or water protection¹, is embedded in within the broader water management sector as well as partially overlaps with the spatial planning policy subsystem.

Since the coastal management in coastal and river flood protection management are sufficiently comparable, we anticipate that the coalitions identified by Meijerink (2005) will also exist within the river flood protection and water management policy subsystem, enabling a longitudinal analysis of Dutch flood protection sector from 2004 to 2024.

Water safety management in the Netherlands has become increasingly complex, involving a wider range of stakeholders and an ever-increasing uncertainty regarding climate change. Arguably, one of the most important developments in the Dutch water safety subsystem, as well as the water management sector as a whole, over the past two decades is the establishment of the Delta Commissioner post, the modern Delta Programme, and the Delta Fund in 2011, all formalized under the Delta Act of that year. The Delta Programme, as it exists today, maintains three key themes: water safety, freshwater (availability) and spatial adaption in relation to climate change. The act was based on the 2007 advisory report *Living with Water*, produced by the Delta Committee (formally, the Committee for Sustainable Coastal Development), which was tasked with advising the government on anticipated impacts of sea level rise, river discharge capacities, and other climate and societal changes through the 22nd century, proposing sustainable coastal development strategies and evaluating their long-term benefits for the Netherlands as whole. As the main government program for water safety and climate change adaptation, the Delta Programme will be a central focus of this study.

Since the Fishermen’s coalition identified by Meijerink (2005) is not expected to play a significant role in inland waters, the focus will primarily be on the Safety and Environment coalitions. However, this does not rule out the possibility that a form of this coalition still exists or that policy actors within the water safety subsystem engage in recreational or professional fishing activities. To better contextualize developments in Dutch river flood protection policy from 2004 to 2024, the next sections will briefly describe the key policy periods and advocacy coalitions found by Meijerink (2005).

¹In this study the terms ‘water safety’ and ‘water protection’ are used interchangeably.

2.2.1 Policy periods in Dutch coastal flooding policy and water management sector (1945 – 2003)

Meijerink (2005) identifies four distinct periods² in the development of Dutch coastal flooding policies between 1945 and 2003:

Phase 1: “Coastal flooding is not a political issue (1945–1953)”

Following World War II, political attention in the Netherlands was focused on rebuilding the country, addressing food shortages, and improving economic welfare. As a result, warnings from experts about the country's inadequate coastal defences (stemming from as early as 1942 (Dubbelman, 1999) received little political consideration. Still, experts devised plans to protect flood-prone areas by enclosing major estuaries, building on previous successful water management projects, such as the construction of the Zuiderzee dyke in 1932, creating the IJsselmeer.

Phase 2: “A dramatic storm surge, development and implementation of the Delta Plan (1953–1973)”

The catastrophic storm surge of February 1953, resulting in 1,835 lost lives and 200,00 hectares of flooded land, led to the establishment of the Delta Committee, an advisory committee tasked with the continuation of earlier efforts to address coastal flooding safety. In 1954, the committee proposed the Delta Plan, a plan which proposed constructing large dams to enclose estuaries in the southwest in order safeguard flood-prone areas by the sea (see Figure 2). To anchor the Delta Plan in Dutch law, the Delta Act was passed in 1957.

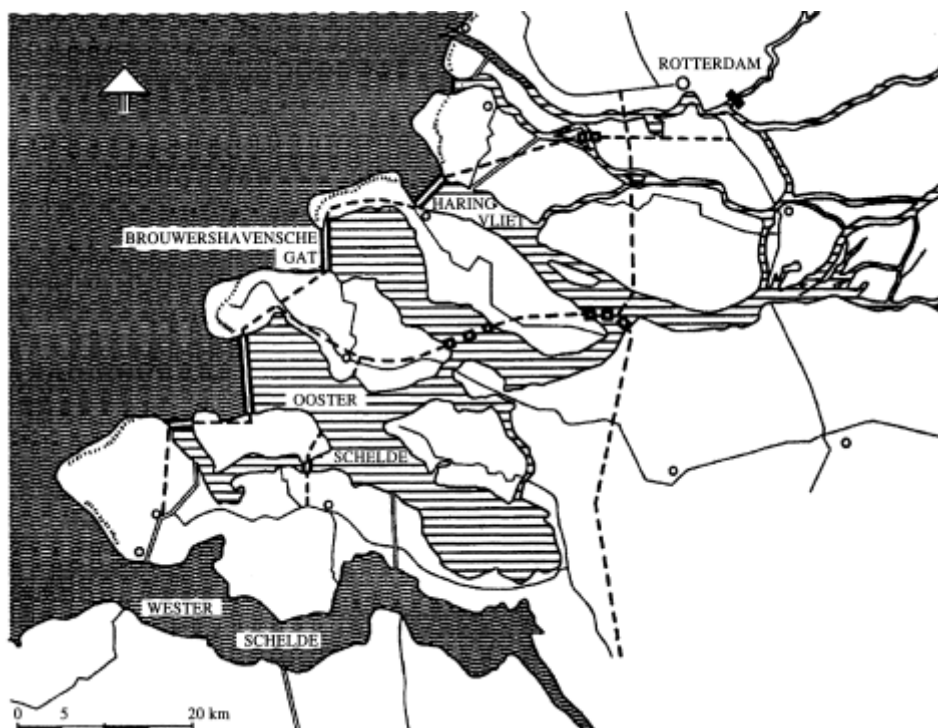


Figure 2: The original Delta Plan as proposed by the Delta Committee. Source: Rijkswaterstaat (n.d.), adapted from Gerritsen (2005).

²Policy period names are reproduced verbatim from Meijerink (2005).

Phase 3: “A breakthrough in Eastern Scheldt policy, and the development of integrated water management (1973–95)”

In 1973, the Den Uyl Cabinet, led by a social democratic prime minister, established the Eastern Scheldt Committee to recommend measures for ensuring safety while taking the ecological value of the estuary into account. In 1974, the committee proposed further studying the feasibility of constructing a semi-permeable dam, which would reduce storm surge risks while preserving estuarine dynamics. After confirming its feasibility, cost and possibility for timely completion, the government issued the construction of a semi-permeable storm surge barrier on piers in 1976 (see Figure 3). This marked a key turning point in the Dutch approach to coastal defence and water management by integrating ecological considerations into coastal defence and water management projects and policy for the first time. That decision then also set the precedent for the systematic integration of ecological concerns and effects into these kinds of projects and decision-making (Disco, 2002).



Figure 3: The Eastern Scheldt Barrier. This barrier was constructed as a semi-permeable dam with sluice gates installed after ecological concerns were addressed for the first time in Dutch coastal flooding and water management policy in the 1970s (Meijerink, 2005; Watersnoodmuseum, n.d.)

Phase 4: “Two (near) river floods and the emergence of a new policy discourse: ‘living with the water’ (1995–2003)”

In 1993 and 1995, the danger did not come from the sea, but from the rivers when the water levels of the Rhine and Meuse rivers became extremely high, threatening large riverine areas with flooding and forcing the evacuation of 200,000 people. This time around, however, no severe flooding took place and no casualties were reported. These shock events underscored the limitations of traditional flood control methods, such as relying exclusively on higher dykes and upgrades to the technical infrastructure. The recognition followed that natural water systems had been overly restricted, and their dynamics and storage capacity needed to be restored in some way, shape or form to reduce future flood risk. The legacy of the near-floods of 1993 and 1995 and the corresponding realisations, combined with a growing awareness of potential flood vulnerability in the Netherlands due to climate change, is the adoption of the “living with the water” as the new policy approach.

2.2.2 Advocacy Coalitions in Dutch coastal flooding policy and water management sector (1945 - 2003)

According to Meijerink (2005), there were three major coalitions and one strategic alliance during the four policy periods:

Safety Coalition

The Safety Coalition was the only influential coalition until the mid-1970s, when it began to be challenged by other coalitions, although it remained a dominant force in the flood protection management subsystem. This coalition was primarily focused on flood protection and safety. It included representatives from the Directorate-General for Public Works and Water Management, the Minister responsible for water management, the Cabinet, the majority of the Dutch Parliament and the province of Zeeland as well as most municipalities, water boards, and agricultural organizations. This coalition prioritized large-scale coastal engineering works without addressing ecological impacts.

Fishermen's Coalition

The first coalition that opposed the Safety Coalition was a coalition that represented the economic interests of local fishermen who would lose their jobs if the Eastern Scheldt estuary would be closed.

Environmental Coalition

The Environmental Coalition was another coalition that emerged in response to the Safety Coalition. It included some representatives from ministries responsible for environmental and nature policies and an increasing number of local and national politicians, as well as many scientists and environmental activists. This coalition began to advocate for ecological considerations and sustainable practices in coastal flooding policies, particularly as opposition to the Delta Plan grew in the mid-1960s. The emergence of this coalition was also linked to the general growth of the environmental movement in the early 1970s. Unlike the Fishermen's Coalition, which was united by a common short-term economic goal, most members of the Environmental Coalition shared deep core and policy core beliefs, such as 'humans are part of nature'. The Environmental Coalition only gained access to decision-making platforms after the 1973 elections and the installation of the Den Uyl government.

Strategic Alliance

In the 1960s and 1970s, a temporary alliance formed between the Fishermen's Coalition and the Environmental Coalition. Although they did not share core beliefs, they collaborated on specific objectives, such as opposing the closure of the Eastern Scheldt, highlighting both the importance of ecological preservation and the regional economy. However, even with their forces combined, they were not able to break the monopoly of the Safety Coalition, which was backed by the Ministry of Transport, Public Works, and Water Management.

2.3 Research questions

The main research question of this study is: "How has the Dutch water safety policy and policy subsystem changed and developed from 2004 to 2024 under the dual influence of neoliberalism and climate change?". This question will be addressed by examining the following sub-questions.

1. What were the main policy developments within the Dutch water safety policy subsystem from 2004 – 2024? What factors explain these changes?
2. How have both climate change and neoliberalism impacted the development of water safety policy in the Netherlands from 2004 - 2024?
3. How have the coalitions, as identified by Meijerink (2005), developed over the last two decades? Have they changed or stayed the same? Did the power relationships change?
4. Did any new coalitions emerge, and if so, what factors contributed to their formation?

3. Research methodology

3.1 Overall Research Design

This study adopted a qualitative research approach to answer the central question, *“How has the Dutch water safety policy and policy subsystem changed and developed from 2004 to 2024 under the dual influence of neoliberalism and climate change?”* by examining: (1) the main policy developments within the Dutch water safety policy subsystem and the factors driving these changes; (2) the impacts of climate change and neoliberalism on water safety policy in the Netherlands during this period; (3) the evolution of the policy coalitions identified by Meijerink (2005), including any shifts in power dynamics; and (4) changes or continuities in the deep core and policy core beliefs of these coalitions regarding the government’s role in ensuring water safety, in response to climate change and neoliberalism.

For the purpose of this study, water safety policy is defined as the governmental approach to managing the risks associated with flooding and water-related hazards. It encompasses various strategies and regulations aimed at protecting civilians, industry and infrastructure from the adverse effects of water, such as flooding and water scarcity, often interconnected with water pollution as well.

The research involved analysis of policy documents, semi-structured interviews with key policy actors and experts in the Dutch water management sector, as well as a comparative assessment of the insights gained from both sources. By exploring the interplay between neoliberalist ideology and policy dynamics, this approach aims to provide a nuanced view on how ideological change might influence policy dynamics and coalition shifts in a policy subsystem heavily influenced by the effects of climate change.

The sub-research question was revised to better align with the empirical findings and the explorative nature of this thesis. The original question, which focused on changes in deep core and policy core beliefs, proved difficult to address during interviews, as core beliefs were rarely discussed in depth due to time constraints and the complexity of the topic. However, a recurring theme in the interviews was the emergence of new coalitions within the water safety policy subsystem. To better reflect these insights and maintain an open, exploratory approach, the fourth sub-question was adjusted to: **“Did any new coalitions emerge, and if so, what factors have contributed to their formation?”**. This revision ensures the research remains grounded in the empirical data while capturing significant structural changes in advocacy coalition dynamics.

3.2 Approach

This research is primarily exploratory, aiming to trace the development of policy and advocacy coalitions in the Dutch water safety policy subsystem over a twenty-year period (2004–2024), using Meijerink’s (2005) work as a foundational reference for a case study approach. By examining how socio-political, environmental, and policy trends - such as climate change, shifting political ideologies, and evolving governance structures - have shaped policy development and coalition dynamics, this study seeks to provide deeper insight into the interplay of these forces. The findings may offer broader implications for understanding how ideological and environmental changes influence water safety governance, both within the Dutch delta and in other vulnerable regions.

3.3 Data collection

3.3.1 Information sources

This study utilized multiple information sources, including Meijerink's (2005) paper on policy stability and change in Dutch coastal flooding and water management (1945–2003). To further understand the research methods previously applied and ensure methodological continuity in this longitudinal study, an interview with the author was conducted in October 2024.

For data collection, twelve semi-structured interviews were conducted between December 2024 and January 2025 with policymakers, former and current government officials, scholars, and water sector experts actively involved in the policy subsystem. This interview method ensured consistency in topics covered, facilitating cross-comparison while allowing interviewees (with diverse connections to the research topic) the flexibility to express their insights in depth, ultimately enriching the dataset with nuanced perspectives.

Interviewees were selected primarily based on their affiliation with the Dutch water safety subsystem, though this connection may take various forms. This included (ex-)employees of government bodies such as the Ministry of Infrastructure and Water Management, Rijkswaterstaat and Waterboards, (ex-)employees linked to government programs such as the Delta Programme, the High Water Protection Program (NL: Hoogwaterbeschermingsprogramma, or HWBP), or Integrated River Management (IRM, now also known as Room for the River 2.0 (NL: Ruimte voor de Rivier)), (scientific) experts, and consultancies employees.

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Policy documents and reports from the Central Government, the Ministry of Infrastructure and Water Management and related governmental bodies, which outline policy intentions and frameworks from the following websites:

Documents:	Hyperlinks:
Policy documents specific to the Ministry of Infrastructure and Water Management	https://www.rijksoverheid.nl/ministeries/ministerie-van-infrastructuur-en-waterstaat/documenten
Yearly 'Water in Beeld' reports from 2004 – 201, from the minister of Infrastructure and Water Management to the House of Representatives (NL: de Tweede Kamer)	https://www.noordzeeloket.nl/vaste-onderdelen/zoeken/?zoeken_term=water+in+beeld https://web.archive.org/web/20071104004548/http://www.waterinbeeld.nl/
Yearly 'Stage of our Water' reports from 2015 – 2023 (successor to 'Water in Beeld')	https://www.onswater.nl/onderwerpen/staat-van-ons-water-overzichtspagina
Further reports about water management and water safety (policy) in the Netherlands	https://iplo.nl/thema/water/waterveiligheid/ https://iplo.nl/@280597/waterveiligheid-nederland-notendop/

The changes in Dutch politics, focusing on (the composition of) governing Cabinets, was explored with the use of a website that offers independent information on the political landscape in the Netherlands and all the people who played a role in it: <https://www.parlement.com>. This database is supported by the 'Parliamentary Documentation Centre' foundation and the Montesquieu Institute, the Dutch knowledge center for parliamentary democracy on both Dutch and EU level.

Information about events related to climate change (e.g., extreme weather events, floods, draughts) in the Netherlands during the past 20 years was taken from the reports 'Climate risks in the Netherlands' (NL: Klimaatrisico's in Nederland) from 2005, 2012, and 2024 (Bresser et al., 2005; Van Gaalen et al., 2024; van Minnen & Ligtoet, 2012).

3.3.2 Relevant policy reports

The Commission for Integrated Water Management (NL: Commissie Integraal Waterbeheer) was the administrative body for coordinating the policy and implementation of integrated water management from 1995 until 2004 (source). The report "Water in Perspective" (NL: 'Water in Beeld') was issued by the Commission for Integrated Water Management, starting in 1998. From 2004 onward, it was issued under the authority of the National Administrative Consultation on Water (NL: Landelijk Bestuurlijk Overleg Water, LBOW) (Ministerie van Verkeer en Waterstaat, 2005). In the LBOW, the State Secretary of Transport, Public Works, and Water Management consulted with representatives from different parties involved in water management in the Netherlands (i.e. ministries, provinces, municipalities, and water authorities).

In 2009, this collaborative effort continued under the name National Water Consultation (NL: Nationaal Water Overleg, NWO) (Ministerie van Verkeer en Waterstaat, 2009). Since the 2011 Administrative Agreement on Water (NL: Bestuursakkoord Water), this partnership, now called the Administrative Umbrella Consultation (NL: Bestuurlijk Koepel Overleg, BKO) continued to produce the Water in Perspective report, together with the Association of Water Companies in the Netherlands (Ministerie van Infrastructuur en Milieu, 2011).

As of 2016, this report was incorporated into "The State of Our Water" (NL: 'De Staat van Ons Water'), a new joint report by the same partners, now called the Steering Committee Water (NL: Stuurgroep Water) (Ministerie van Infrastructuur en Milieu, 2016). Initially, The State of Our Water was aimed at the House of Representatives, water professionals, and the general public. However, in 2018, the partners decided to shorten the report and focus primarily on accountability to the House of Representatives (Ministerie van Infrastructuur en Waterstaat, 2019).

The information in this section is based on the Water in Perspective and The State of Our Water reports, the 2017 booklet Water Safety - Understanding Concepts (NL: Waterveiligheid: Begrippen begrijpen) (Rijkswaterstaat, 2017), especially the first chapter on the history of water safety policy, and the interviews performed in this study.

3.3.3 Applied methods and instruments

Chronological overviews

To map the context of key developments and influential events in the Dutch water safety policy subsystem over the past 20 years, a chronological overview was developed based on policy reports. This overview highlights major policy and legal developments in Dutch water management between 2004 and 2024, such as the launch of the Room for the River program in 2006. It also includes relevant EU policy events that influence the national policy subsystem, such as the ratification of the Water Framework Directive. The driving factors behind these developments were further explored through interviews.

To contextualize policy subsystem developments, an overview of Cabinet compositions and political orientations between 2000 and 2024 was compiled. The political chronology extends further

back to 1982 to account for the delayed impact of political decisions on policy implementation. Additionally, 1982 marks the start of the first Cabinet led by Ruud Lubbers, the Dutch prime minister initially associated with neoliberal-inspired policies.

Finally, an overview of significant climate change-related events and developments relevant to the Netherlands between 2004 and 2024 was created. This includes extreme weather events within the country as well as key global climate conferences, recognizing that both physical climate impacts and policy responses shape the broader context of policy subsystems.

These overviews of policy, political, and climate change-related developments provide essential contextual background for analysing the semi-structured interviews, which form the second part of the data collection and analysis in this thesis.

Expert interviews

The chronological overviews served as a contextual backdrop for analysing the interviews, offering an opportunity to compare policy document analysis and interviewee input and observations. The semi-structured interviews in turn supplemented the policy document analysis in constructing a nuanced (over)view of policy stability and change in Dutch water safety policy in an attempt to answer the research questions. For an overview of the conducted interviews, see Annex A. All interviews were recorded with consent of the interviewee. All interviewees received an 'Informed Consent' form containing several stipulations, e.g. how personal information would be handled and, in order to conduct transparent and ethical research practices, see Annex B. The interviews followed a semi-structured approach, set out by the interview script, see Annex C.

Interviewees were asked for input regarding:

- Their ideas and observations about the most important policy developments in the Dutch water sector during the last 20 years (2004 – 2024), more specifically in regard to water safety policy, and what the driving factors were behind these (policy) developments according to them.
- Their ideas about these developments in the context of climate change and its influence
- Their ideas about these developments in the context of (changing) administrative approaches and trends, such as New Public Management (NPM), and their influence
- Their ideas and observations about the advocacy coalitions as identified by Meijerink (2005) and the relevancy or applicability of this analysis to today's water sector or policy subsystem, as well as the involvement of the private sector in these coalitions.
- Any further important points of discussion according to them.

In this sense, the interview protocol followed an hourglass-shaped structure, starting with a broad inquiry about (policy) development in the policy subsystem, narrowing to these developments in the context of climate change and the influence of administrative approaches (such as NPM) as well as reacting to Meijerink's (2005) analysis, and lastly finishing with a broad question to catch any potential additional points of attention.

3.4 Data processing

Most interviews were conducted digitally via Microsoft Teams, with automatic transcription using the platform's transcription function. Afterward, transcripts were cleaned and cross-checked against the original audio recordings. The finalized transcripts were then uploaded to Atlas Ti for further analysis.

3.5 Data analysis

The data analysis process involved a combination of inductive and deductive approaches, using thematic analysis, based on several papers such as by Braun & Clarke (2006), Karatsareas (2022), and Sotirov & Winkel (2016). The analysis of the interviews was conducted using ATLAS.Ti software and focused on reviewing each interview individually to extract key themes. Beforehand, I created an initial codebook based on the research questions, which was continuously refined as new insights emerged from the data. Data was fully translated from a mix of Dutch and English into English during the analysis and writing the results and discussion sections of this report.

To create a chronological overview of policy developments over the past 20 years, the relevant policy documents and reports were analysed as described under 'Data collection', see above. This overview served as a reference point, which was later compared to the timelines based on developments and events shared by interviewees, providing a cross-reference to promote accuracy and groundedness in the analysis.

The data analysis followed a broad structure informed by three main themes: key events, developments in water safety policy, and advocacy coalitions. The first theme focused on identifying important or turning points related to climate change, politics, public administration, and policy events. The second theme examined developments within the water safety policy and the water sector/policy subsystem, exploring the driving factors behind these changes. The third theme focused on identifying advocacy coalitions and their influence on or connection to policy changes, as well as the related policy issues.

3.6 Ethical considerations

Informed consent was obtained from all interview participants, ensuring they are aware of the study's purpose and their right to withdraw at any time. Anonymity and confidentiality were maintained by assigning pseudonyms or anonymous codes to participants and securely storing data.

4. Results

This chapter provides a foundation for addressing the central research question: “How has the Dutch water safety policy and policy subsystem changed and developed from 2004 to 2024 under the dual influence of neoliberalism and climate change?”. The first section, **Broad Developments (4.1)**, provides a macro-level overview of key trends that have shaped the policy landscape over the past two decades. It explores how the influence of climate change and neoliberalism has manifested in the evolution of Dutch water safety policy and directly relates to the sub-questions:

1. What were the main policy developments within the Dutch water safety policy subsystem from 2004 to 2024? What factors explain these changes?
2. How have both climate change and neoliberalism impacted the development of water safety policy in the Netherlands from 2004 to 2024?

The next section, **Policy Events (4.2)**, describes specific, significant policy events that serve as case studies or turning points within the broader trends. It also identifies key events in climate change policy and public administration to provide further context. Each event is discussed in relation to the overarching themes from the previous section, demonstrating how broad trends and developments have translated into concrete actions, legislation, and projects, further helping to answer the sub-questions as mentioned above. The last section, **Coalitions (4.3)**, examines the role of policy actors and advocacy coalitions in the Dutch water safety policy subsystem, analysing how key stakeholders have shaped policy shifts. It explores the evolution of coalitions identified by Meijerink (2005) and the emergence of new coalitions, offering insights into current policy discussions - and the underlying value debates - stakeholder interactions, and policy influence through coalition dynamics. This section addresses the sub-questions:

3. How have the coalitions identified by Meijerink (2005) evolved over the last two decades? Have they changed or remained the same? Did power relationships shift?
4. Did any new coalitions emerge, and if so, what factors contributed to their formation?

4.1 Broad developments

Over the past twenty years, Dutch water safety policy has experienced both stability and change. While certain elements, such as water security being seen as a core governmental responsibility and the continued relative absence of privatization within the water sector, have remained consistent, other aspects have evolved significantly. This stability aligns with the deep core beliefs of the dominant policy coalition, as identified by Meijerink (2005), which continues to view state intervention as essential for ensuring national water safety. Accordingly, even in projects with multiple objectives - such as integrating water management with spatial planning or ecological restoration - water safety remains the top priority, reflecting the enduring policy core beliefs of key coalitions.

Drawing on expert insights, the diagram offers a visual overview of the evolution of the Dutch water safety policy subsystem between 2004 and 2024, with certain shifts tracing back to the 1990s as a period of foundational or incremental change, responding to factors such as climate change, institutional shifts, and political and social influences. It captures the complex context of both policy change and stability, highlighting the evolving debates and external pressures that have driven key developments. These include a shift from top-down to bottom-up governance, a more integrated and multi-disciplinary approach to water management, and a complete overhaul of the funding system for policy implementation. While these changes do not completely dismantle the foundational elements of past policies, they have introduced more integrated and participatory approaches, reshaping the landscape of Dutch water safety policy.

Key Developments and Influencing Factors in the Dutch Water Safety Policy Subsystem

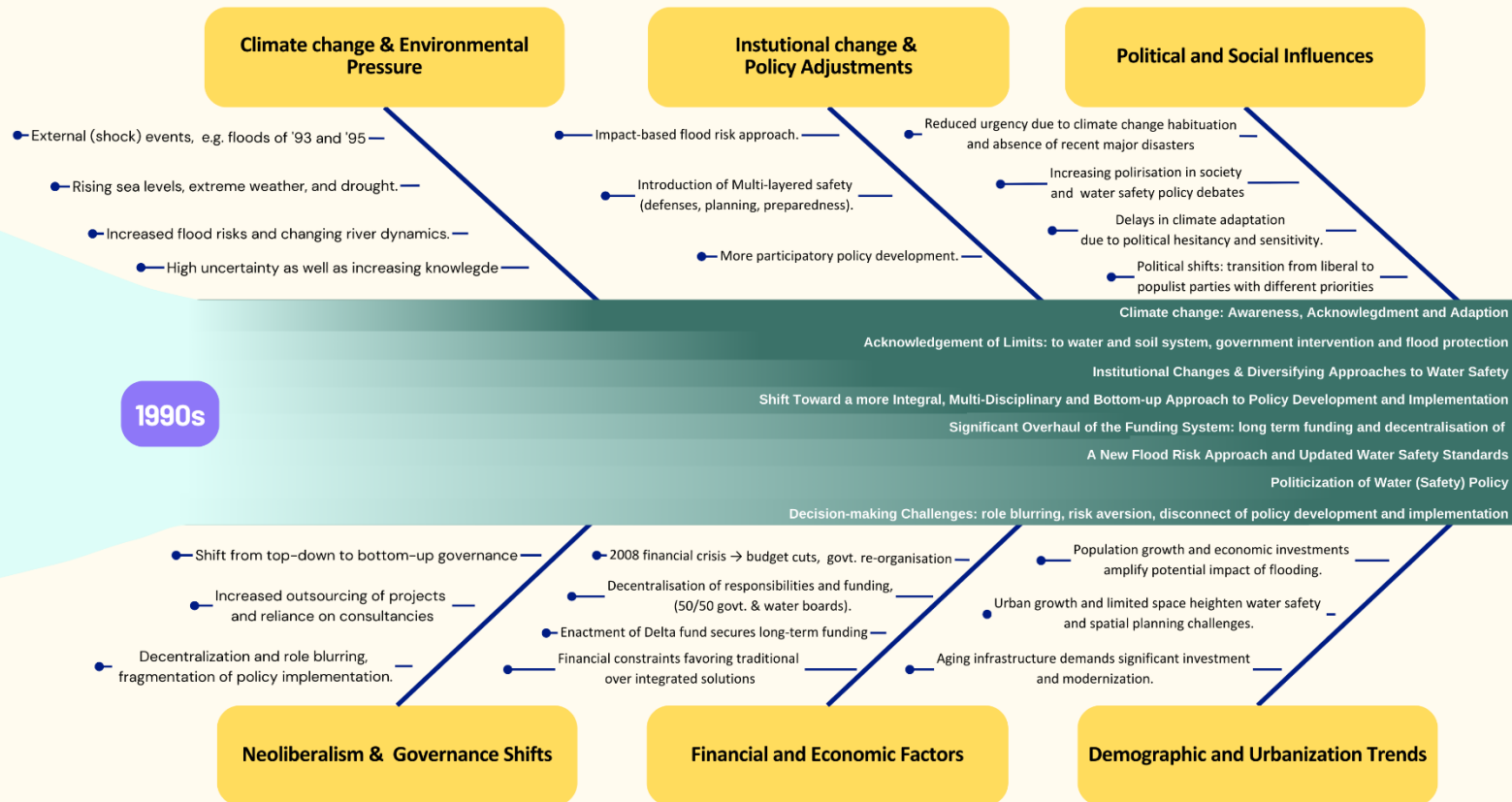


Figure 4: Ishikawa (fishbone) diagram depicting the key developments and explanatory factors in the Dutch water safety sector from the 1990s to 2024, based on expert interviews. The diagram organizes these developments in approximate chronological order, recognizing that they may overlap, interconnect, or not follow a strictly linear progression.

4.1.1 Climate change: Awareness, Acknowledgement and Adaption

Climate change is one of the most important factors driving the policy developments in the Dutch water safety policy subsystem, which was acknowledged unanimously by the interviewees. In the context of this policy subsystem, the most important climate change impacts are the increase sea level rise, extreme precipitation and the resulting risk of flooding, changing riverine flow dynamics (i.e., increase in winter, decrease in summer), as well as extreme droughts. In addition to the separate impact of these climate change effects, further attention was drawn to the potential risks of compound events and their inherent unpredictability. For more information about recent effect of climate change in the Netherlands, see Appendix E.

In the scientific literature, there is strong consensus about the risk to sea level rise (SLR) to the Netherlands, because substantial areas of it lie below sea level and are vulnerable to flooding: sea level rise is expected to have major effects on the habitability and liveability in the Netherlands, possibly as early as this century (Van Gaalen et al., 2024). The risks of and challenges with SLR are compounded in several parts of the country by the subsidence of the land itself due to peat oxidation, gas extraction and soil compaction (Van Gaalen et al., 2024). While far outside the research period of 2004-2024, the 1953 flood disaster remains a pivotal event in Dutch history, especially in regard to water management and water safety, and was mentioned as such by several interviewees. Within the research period, no incidents specifically related to SLR were mentioned. Despite the lack of recent events, sea level rise - considered a potential existential threat to the Netherlands - remains a persistent concern in water safety policy and planning, which has led to the implementation of programs like the Knowledge Program Sea Level Rise (NL: Kennisprogramma Zeespiegelstijging) under the Delta Programme.

Extreme precipitation, particularly when concentrated over a short period, can result in peak discharges that strain water systems and thus increased flood risks, especially combined with shifting river dynamics leading to discharge levels in the winter (Bresser et al., 2005; Van Gaalen et al., 2024; van Minnen & Ligtoet, 2012). As mentioned by the majority of interviewees, the (near-)floods of the Meuse and Rhine rivers in 1993 and 1995, fuelled by large quantities of precipitation and meltwater, raised alarm about the storage capacity of the water system. Although no casualties occurred, in 1993 the Meuse flooded approximately 8% of the Limburg province, including several residential areas (Rijkswaterstaat, n.d.). In 1995 these same residential areas were affected again, leading to the evacuation of approximately 12.000 people, next to the 250.000 people and 1 million animals being evacuated in Gelderland (Rijkswaterstaat, n.d.). These events marked the first realization that the danger to water safety could not only come from the sea but also from rivers, and they were linked to climate change effects, such as extreme precipitation and increased peak river discharge. At the same time, there was a growing awareness of the limitations of relying solely on technical solutions and engineering to ensure water safety. It became clear, as one interviewee put it, that *“it was important for people to have more respect for the natural course of the river, which also needs space.”* (Interview 8).

Another climate event identified in the interviews and linked to extreme precipitation were the heavy rains and subsequent flooding in 1998, which inundated parts of the Noordoostpolder polder, which ruined harvests and threatened the electricity supply to the northern Netherlands due to the presence of a crucial electricity node. Although it was *“not the first time it rained”* as one interviewee recounts, it was the first time people linked climate change and changing weather events, leading to questions like: *“Is the climate changing now? Because this kind of extreme rainfall is suddenly much more frequent and much more intense.”* (Interview 1). The influence of Hurricane Katrina in 2005 was also mentioned by several interviewees, with some noting that it raised awareness of vulnerability to water safety risks, climate change and influenced policy changes, as corroborated in

the 2017 report by RWS. Finally, several interviewees identified the 2021 floods in Limburg, fuelled by extreme precipitation and increased peak discharges in the rivers, as another key event and an example of extreme weather events, that further highlighted the limitations of the water system to cope with the increased weather extremes.

However, increased precipitation and riverine discharge levels are not the only climate related developments that influence water safety management in the Netherlands. For example, during dry periods, insufficient water retention can jeopardize river systems, especially when combined with lower river discharge levels during the summer, potentially disrupting trade that disrupt trade and degrade water quality (Van Gaalen et al., 2024). In other words, there is a balance to be struck between increasing both the discharge and retention capacity of the Dutch water systems in order navigate demands and challenges from several dimensions. Furthermore, long periods of drought are also a concern for water safety, as it became clear during the 2003 drought that a lack of precipitation could cause dykes to shrink and tear (Bresser et al., 2005). Indeed, a number of interviewees explicitly mentioned the 2003 dyke breach in Wilnis, and the subsequent flooding of a residential area, as an important event for the Dutch water safety policy subsystem.

The aforementioned climate change effects may occur simultaneously, sequentially, or otherwise amplify one another (van Gaalen et al., 2024; van Minnen & Ligtvoet, 2012). As these effects grow in frequency and intensity, the chance of mutual reinforcement increases, raising the risk of flooding and creating new challenges regarding water safety issues in the Netherlands (Klijn et al., 2010; van Gaalen et al., 2024). In summary, the sense of urgency regarding the climate crisis also increased in the water safety policy subsystem, because all of the aforementioned concerns were already present in 2005, but the speed of SLR was not yet increasing with the speeds that were seen towards the end of the study period, and although the predictions were severe, there was still uncertainty if big storms and extreme droughts such as those in 2003 would become a common occurrence (Bresser et al., 2005).

Indeed, several interviewees mentioned climate change, and more specifically SLR as a (potential) existential threat or issue that is present the water safety subsystem and influences how policy is made. In 2012 there was still a lot of uncertainty about future impacts of climate change on the occurrence of droughts and increased precipitation, but there was an increase in concern about river flow dynamics (van Minnen & Ligtvoet, 2012). This means that although there were some noticeable effects, the first half of the study period was mainly marked by uncertainty about the specific effects of climate change. The impacts of climate on extreme weather events change started to become more abundantly clear around 2018, and the increase in speed of SLR became a reality around that time as well (Van Gaalen et al., 2024). Interestingly enough, various interviewees remarked on the importance of climate scenarios and models as well as knowledge development in water safety policy development, as one interviewee names *“climate change and the effects we are already seeing from that”* in relation to climate scenarios and their predictions as driving factors to consider optimal preparation for the future (Interview 7). Another interviewee mentioned that they *“take into account the standards and actions required based on [those] climate scenarios, such as dyke reinforcement, management and maintenance.”*, saying that it is purely driven by the expected climate change and its effects (Interview 11).

Since the 1990's and over the course of the research period, the Dutch water safety policy subsystem has progressed from awareness of climate change to its acknowledgment as a pressing challenge and, ultimately, to adaptation through knowledge development and policy adjustments. Climate change is now a fundamental consideration in water safety policy and planning, shaping policies to address challenges such as increased peak discharges, rising sea levels, extreme weather events, and compounding effects. These concerns are consistently reflected in both policy reports and expert interviews, where interviewees emphasized the growing urgency of addressing climate-related

risks. Additionally, experts highlighted the importance of spatial planning in ensuring a climate-resilient future for the Dutch delta, underscoring the necessity of integrating water management with land use planning. As one expert put it, *“Dealing with flooding means arranging water storage capacity, which takes space. [...] So water and space are inextricably linked in physical reality, but in policy they are sometimes still separate worlds”* (Interview 6).

4.1.2 Acknowledgement of Limits

During the research period, the effects of climate change - including increasingly extreme weather and compound events - have resulted in a growing recognition that not everything can be built or engineered everywhere, nor can every scenario be fully calculated, predicted, or prevented, a development which was mentioned by most (but not all) interviewees. While innovation and technical solutions continue to play a key role in Dutch water safety policy, there is an increasing acknowledgment of the limitations of the water and soil system. This has led to both a greater acceptance of the constraints these limitations impose on spatial planning, and the recognition that relying solely on technical solutions is not sufficient. The institutionalization of this shift started in the early to mid-2000's - see the Room for the River program and the Delta Programme as described in section 4.2. A later example of this shift is the 2022 Parliamentary letter 'Water and Soil as a Driving Principle' (NL: Kamerbrief 'Water en Bodem sturend'). The letter was described as important, because it officially acknowledged the limits of the water and soil system and brought this issue to the forefront of the political agenda. One interviewee described it as *“a kind of confirmation of a development that everyone thought: we knew that all along”*, officially acknowledging the limits of the water and soil system, bringing this issue to the forefront of the political agenda and *“now it is policy.”* (Interview 7).

As a result of these acknowledgments, the government has shifted away from its past promise of 100% water safety, moving from a focus on flood prevention to flood risk management. This transition also places greater emphasis on civil preparedness in the context of water safety. The increasing frequency of extreme weather events has further underscored the limits of state intervention, prompting a more multi-layered approach to flood risk management. This shift is reflected in the introduction of the 'multi-layer safety' concept (NL: meerlaagse veiligheid) in 2009 (Bosoni et al., 2023), which integrates flood defences with disaster preparedness and spatial planning to reduce overall risk.

4.1.3 Institutional Changes & Diversifying Approaches

Around the same time, the Dutch water safety subsector experienced notable institutional changes and further diversification in approaches to water (safety) management. The reorganization of Rijkswaterstaat (RWS) starting in the early 2000's, marked its transformation from a powerful, technocratic institution engaged in both policy development and implementation into a more public-oriented and limited executive agency. One interviewee describes the organization as being *“under pressure, [...] heavily criticised also by all kinds of parliamentary inquiries that were going on at the time, [the one about] construction fraud, for example, [and] the push for a more modern government”* (Interview 6). Indeed, budget overruns, (suspected) fraud, and a parliamentary inquiry had damaged RWS's public image in the early 21st century, being seen as inefficient and ineffective (Goverde, 2012; van den Brink, 2021). This re-organization, in order to regain political and social credibility, included a substantial reduction in RWS's workforce, from 11,300 employees in 2003 to 8,800 in 2006, including *“technical engineers who took their specialist knowledge with them as they moved to consultancy firms”* (Goverde, 2012) increasing reliance on outsourcing project design and implementation.

This shift also changed power dynamics in the policy subsystem and can be linked to a broader "managerial" or "neoliberal turn," driven by neoliberal reforms and increasing public demand for transparency and participation in policy-making (van den Brink, 2021). While RWS had once operated in a "technocratic paradise," with an uncontested monopoly on expertise, it now faced challenges in adapting to new societal demands (van den Brink, 2021). One interviewee observed that it has all become "*much more managerial. Where once the knowledge and experience of an engineer could lead to a direct intervention, now it is much more complicated.*" (Interview 4).

This sentiment aligns with the diversification of approaches to water management and safety that emerged during the study period. While the sector experienced an ecological shift in the 1970s (Disco, 2002; Meijerink, 2005), a majority of the interviewees also highlighted a "spatial" shift in the early 2000s, marked by the integration of spatial quality into water management. Additionally, one interviewee specifically pointed to a "democratic" shift, which reflected a more participatory approach to policymaking, as well as a "neoliberal" shift, influencing governance and market dynamics.³ Other interviewees described similar developments, but did not specifically name these shifts as such.

While this expansion of professional 'groups' - such as ecologists, spatial planners, managers next to the 'original' engineers - seem to have facilitated a more integrated, multi-disciplinary approach to water management, it also can also lead to competition among these approaches and professional groups, each advocating for its own perspective as the best solutions for water safety. As one interviewee highlighted, "*Someone with a hammer sees nails everywhere, and someone with a screwdriver sees screws everywhere*" (Interview 11), arguing for awareness on how your own perspective and background influences what you see as the best solution. This competition for relevance, driven by differing professional backgrounds and ideas on solutions, possibly adds to the complexity of the policy subsystem and its discussions.

4.1.4 Shift Toward a more Integral, Multi-Disciplinary and Bottom-up Approach to Policy Development and Implementation

Following the acknowledgment of the limits described in section 4.1.2 and the institutional changes described in 4.1.3, Dutch water safety policy has transitioned from a technocratic, single-focus approach to a more integrated, multi-goal and multi-disciplinary strategy. Although one interviewee mentioned that the term 'integrated water management' already stems from the 1980's, this shift starts to gain traction in the early 2000's, after both climate events, e.g. the (near) floods of '93 and '95 and the heavy rains in '98, as well as a societal movement and subsequent pressure towards more bottom-up and participatory governance. It aligns with broader spatial planning trends and first emerged in programs like Room for the River (2006-2019), and later initiatives such as the Delta Programme, including Integrated River Management (now Room for the River 2.0). Policy development has also become more interactive and participatory, engaging multiple levels of government, the private sector, and civil society. Notably, the Delta Programme actively involves youth in policy development (Interview 1), and the Environmental and Planning Act (2024) has made participatory processes mandatory for public projects. Building on the acknowledgment of limits, this integrated approach - incorporating concepts like multi-level safety - has further embedded spatial quality and planning into discussions within the water safety policy subsystem.

4.1.5 Significant overhaul of the Funding System

Another important development that occurred during the study period, is the significant change to the funding system for water safety policy, which largely influenced by the 2008 financial crisis and its

³ While each of these turns is very interesting in their own right and represents important developments within the water safety policy subsystem, it is beyond the scope of this thesis to elaborate on each of them individually.

widespread economic consequences. The crisis led to budget cuts and restructuring across government bodies, including water management and dyke reinforcement. In response, the 2011 National Administrative Water Agreement introduced a new, more de-centralised funding model, establishing a 50/50 cost-sharing arrangement between the national government and water boards (i.e., local government bodies responsible for the upkeep of regional water systems). This arrangement included a solidarity mechanism, which meant that all water boards now contribute to the costs of dyke reinforcements under the High Water Protection Program, even if no dykes were part of their jurisdiction.

That same year, the second Delta Committee's Advisory Report, *Working Together With Water*, recommended securing long-term funding for water safety. This led to the establishment of the Delta Fund in 2012, enshrined in Dutch law through an amendment to the Water Law. The fund allocated over €1.2 billion annually for Delta Programme measures until 2037, with recent increases in funding. Alongside the Delta Fund, the Delta Programme and the role of Delta Commissioner were also formally introduced at this time.

4.1.6 A New Flood Risk Approach and Updated Water Safety Standards

Alongside the overhaul of the funding system, economic efficiency has become a central consideration in Dutch governance and policy implementation, including the water safety policy subsystem. While the 2008 Delta Committee proposed a tenfold increase in safety standards (without a cost-benefit analysis), around the same time, discussions emerged regarding the need for more economically efficient methodologies (Kind, 2014). Eventually, flood protection standards in the Netherlands were recalculated using cost-benefit analysis and flood risk assessments, leading to their legal update in 2017.

The development of a new flood risk approach and subsequent water safety standards for primary flood defences, came forward in the interviews as one of the most important policy developments of the last twenty years. Flood risk management in the Netherlands has evolved from a purely statistical approach to an impact-based model that considers societal and economic consequences as well as the (potential impact of) climate change, shifting the focus from flood prevention to risk management (Bosoni et al., 2023; Kind, 2014). This differentiation in safety standards ensures that, for example, flood defences protecting residential areas are subject to stricter norms than those safeguarding agricultural land. During the development of the new flood safety standards, care was taken to ensure that the monetization of intangible damages such as loss of life, injury and trauma, was performed as ethically as possible, as well as based on scientific studies (Kind, 2014).

According to one interviewee, this policy transition, embedded in the project Water Safety 21st Century (NL: Waterveiligheid 21e Eeuw) and further developed in the Delta Programme, remains ongoing, particularly within coastal and river programs. The interviewee emphasized that since not all risks can be predicted or calculated, policy should focus on reducing intrinsic vulnerabilities by integrating natural safety measures, incorporating system redundancy, and ensuring safe evacuation routes alongside traditional flood defences.

4.1.7 Politicization of Water (Safety) Policy

A more recent development, according to several interviewees involved in (research into) public administration/politics, is that water management, traditionally a technical and consensus-driven issue, is becoming increasingly politicized. In recent years, water management is often framed as a 'leftist hobby', closely tied to nature conservation and environmentalism. One critical area where these political changes manifest is the debate on agricultural land and its role in spatial planning and water management policy. One interviewee said these developments are likely linked to the broader process

of polarization currently taking place in Dutch society, as exemplified, for example, by the shift from parties like the VVD to the PVV and BBB. This shift was described as driven by uncertainty, both regarding the scientific predictions about different climate scenarios, as well as existential uncertainty due to climate change, and decreased social security as a result of the deconstruction of the welfare state. The transition from parties like the VVD to the PVV can also be understood as part of a larger movement away from globalization and international cooperation toward a stronger emphasis on national interests. This shift could impact transboundary river management, as Dutch water systems are closely linked to neighbouring countries, which could be problematic since multilateral agreements and cooperation are crucial to tackling systemic issues related to water management, such as managing peak discharge and minimum discharge levels during wet and dry weather extremes as well as managing water quality and impacting water pollution factors.

4.1.8 Decision-making challenges

Finally, there was a general consensus among interviewees that, as a result of the developments described above, there are several challenges in the decision-making process within the water safety policy subsystem. First, the decentralization and fragmentation of the policy implementation process, along with role blurring between government bodies as well as an unclear division of responsibilities, which feeds into a lack of administrative courage and an unwillingness to take responsibility, hindering effective decision-making.

Risk aversion within the government further exacerbates these challenges, as lengthy planning phases are often prioritized over implementation, reflecting a reluctance to take decisive action. According to a majority of interviewees, this hesitancy is particularly present (and problematic) whenever far-reaching spatial planning decisions need to be made, because political sensitivities lead to delays in necessary interventions and a pro-active approach to climate change adaptation.

Finally, shifts in public administration approaches have led to a widening disconnect between policy development and implementation. While policy development may incorporate multi-goal ambitions and strategies, reflecting an integrated approach to water management, in practice policy implementation continues to come down to relying primarily on technical or 'grey' solutions rather than integrated approaches, often seemingly largely due to financial concerns (e.g. the Flood Protection Program).

4.2 Policy events

This section outlines the major policy events in Dutch water safety policy between 2004 and 2024, including relevant climate and political events (see figure 5). The policy developments listed are based on government reports and expert interviews, as outlined in the Methodology section.

4.2.1 A 21st century view on water management

In order to understand the changes in the water safety policy in the Netherlands between 2004 and 2004, it is important to know that, at the end of the 20th century, the ‘Commission for Water Management in the 21st century’ (NL: Commissie Waterbeheer 21e eeuw) noted that a change was needed in the water safety policy subsystem (Rijkswaterstaat, 2017). They surmised that instead of trying to tightly contain rivers and other bodies of water, or getting rid of any influx of water as soon as possible (NL: “pompen en zo snel mogelijk lozen”), water needed to be given more space, because this would reduce the risk of flood-related disasters, reduce flooding during heavy rainfall, as well as save water for dry periods (NL: “vasthouden, bergen, en afvoeren”) (Rijkswaterstaat, 2017). Indeed, this pivot in attitude about water management was mentioned by several interviewees. The Meuse Works (NL: Maaswerken) and Room for the River (Ruimte voor de rivier), which are described below, are early examples of the implementation of this approach (Rijkswaterstaat, 2017), and one interviewee mentioned the Delta Programme specifically as the operationalization of the new approach to water safety standards.

4.2.2 New Water Law

The Water Act (NL: Waterwet) was introduced in 2005 (and enacted in 2009) to consolidate this view, by combining eight different water laws to address water-related challenges such as flooding, water scarcity, and pollution, including the Flood Defense Act (NL: Wet op de waterkering) that first introduced normative safety standards for primary flood defences (Ministerie van Verkeer en Waterstaat, 2006; Rijkswaterstaat, 2017). It specifically aimed to decentralize where possible and to simplify the financial framework and provided a legal framework for a number of water safety measures such as rules for primary flood defences (NL: ‘Regeling veiligheid primaire waterkeringen’) and as and subsidies for water management (NL: ‘Regeling bijzondere subsidies waterkeren en waterbeheren’) (Ministerie van Verkeer en Waterstaat, 2006; Rijkswaterstaat, 2017). It also assigns specific uses to water bodies (e.g., navigation, drinking water, agriculture, industry, recreation), with quality and infrastructure requirements set by the government based on these uses (Rijkswaterstaat, 2017).

In 2012, the Water Act was amended to formally establish the Delta Commissioner, the Delta Programme, and the Delta Fund, with experts highlighting the Delta Programme as one of the most significant policy developments in Dutch water management. In 2016, the Water Act was further updated to incorporate the 2017 safety standards for primary flood defences, developed as part of the Delta Programme—an amendment also recognized as a key policy milestone (Ministerie van Infrastructuur en Waterstaat, 2018). On the 1st of January 2024, after some initial delays, most of the Water Act was officially integrated into the Environment and Planning Act (NL: Omgevingswet), though financial provisions and Delta Act articles remained separate (Ministerie van Infrastructuur en Waterstaat, 2021; Rijkswaterstaat, 2017).

**EVENT OVERVIEW:
COMBINED**

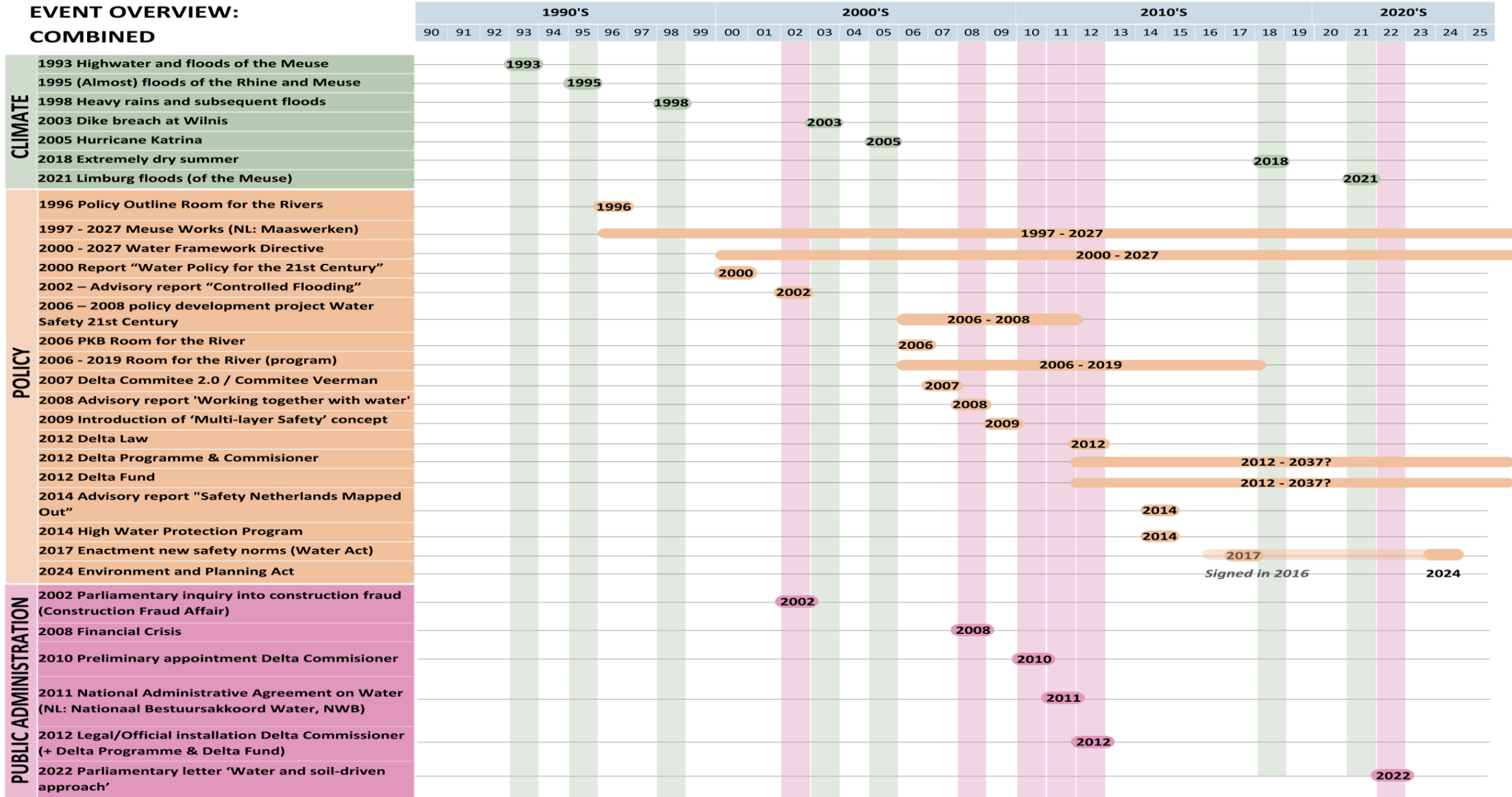


Figure 5: Overview of policy change events, including relevant climate and public administration events, based on expert interviews.

4.2.3 Meuse Works

Together with the province of Limburg, Rijkswaterstaat began implementing the Meuse Works (NL: Maaswerken), a major infrastructure project to improve safety in the catchment area of the Meuse river in the provinces of Limburg, North Brabant and Gelderland, in 2005 and 2006 (Rijkswaterstaat, 2017). The Meuse Works project began as part of the Delta Plan for Large Rivers, which was introduced after the high water levels in 1993 and 1995, and included deepening the river by extracting gravel, which improved the navigability of the Meuse, as well as the realization of hundreds of acres of new nature areas (Ministerie van Verkeer en Waterstaat, 2006). This project was discussed more in depth by an interviewee, who explained that although the Meuse Works prioritized high water safety, it also aimed to improve spatial quality, shipping routes, and ecological conditions, following the realisation that technical interventions alone were insufficient for ensuring water safety in riverine areas. However, according to the interviewee, these ambitions were not fully realised: *“But in my view, that was often a kind of “green sauce” over a primary flood protection measure. If you look at the final decision-making within these programs, you can see that water safety and achieving water level reductions in centimetres were absolutely guiding. In the final phase, many measures that were in the original package and had ecological added value were dropped.”* (Interview 8). The project aimed to finish in 2015 (Sand Meuse section) and in 2017 (Border Meuse section) (Ministerie van Verkeer en Waterstaat, 2006). Eventually, the deadline was moved to 2020 (Rijkswaterstaat, 2017), but work was still underway in 2021 (Ministerie van Infrastructuur en Waterstaat, 2022). At the time of writing, the project is mostly completed, but work is still ongoing on three locations (Rijkswaterstaat, n.d.).

4.2.4 Room for the River

The program Room for the River (NL: Ruimte voor de Rivier) was launched in 2006, after a Spatial Planning Key Decision (NL: Planologische Kernbeslissing, PKB) with the same name was drawn up by the Dutch government. This program aimed to improve flood safety and maintain liveability in the Dutch river floodplains, by creating more room for rivers rather than solely raising dykes to deal with the increased discharges of rivers such as the Rhine and the Meuse (Ministerie van Verkeer en Waterstaat, 2006; Rijkswaterstaat, 2017) and prevent a repeat of the (near) floods in '93 and '95. The program, which included the creation of side channels (sometimes referred to as gullies), dyke relocation, lowering summer riverbeds, reducing groyne heights, and removing obstacles from floodplains, was completed in 2017 (Ministerie van Infrastructuur en Waterstaat, 2018).

The Room for the River program was mentioned by almost all interviewees as an important early example of the shift mentioned in section 4.2.1, because it was one of the first instances of policy development in this policy subsystem that explicitly moved towards a more integrated rather than a singularly focused approach to water safety. One interviewee described this turnaround in thinking in the water sector as fundamental to the Room for the River Program: *“We really need[ed] to start looking at how we can give the river more space within the levees to guarantee that extra water discharge. So, we've really started looking more at what the landscape looks like, what we can do to restore old systems, and what we can couple with nature development, for example, to give the river system back some of its natural state, compared to what it's been for the last 100 years.”* (Interview 10). The program is also mentioned as an example of the shift towards more participatory policy development: *“Room for the River was a core planning decision, really an incorporation decision from the central government. So there was quite a bit of hierarchical steering on that. It was partly top-down and partly bottom-up, really a combination of the two.”* (Interview 2).

4.2.5 Second Delta Committee

Immediately after the 1953 North Sea flood (NL: Watersnoodramp) the Dutch government appointed the first Delta Commission, which was tasked with finding out what would be needed to prevent such devastating floods in the future (Rijkswaterstaat, 2017). A year after the storm surge, the committee presents its most important proposal: the Delta Plan, which included raising all sea walls to “delta height,” or five meters above sea level, and shortening the coastline by seven hundred kilometres by completely closing off the estuaries in the Rhine-Meuse-Scheldt delta area. (Meijerink, 2005; Rijkswaterstaat, 2017).

More than five decades later, in 2007, the Balkenende IV Cabinet established the second Delta Committee, headed by former Minister of Agriculture, Nature, and Fisheries (NL: Landbouw, Natuurbeheer en Visserij) Cees Veerman (Rijkswaterstaat, 2017). This Committee advised on flood protection and securing freshwater supplies, while considering different types of land use (e.g., living and working, agriculture, nature, recreation) as well as infrastructure and energy use. The report delivered in 2008 contained far-reaching recommendations, which were closely related to the climate change effects described in the previous section (Ministerie van Verkeer en Waterstaat, 2009). For example, it specified that safety measures should take into account upper limits for sea level rise between 0.65 to 1.30 meters in 2100, and 2 to 4 meters in 2200, and increased discharges for the Rhine and Meuse in 2100 should be considered as well (Rijkswaterstaat, 2017). As one interviewee described it: *“the Veerman Commission really sent an important message: we are in a good place now, but that could change completely when it comes to water safety, freshwater supply and the climate-adaptive design of urban areas.”* (Interview 2). Another interviewee also emphasized the Committee’s advice on governance, recommending a networked and participatory approach where different government levels work together instead of the national government relying solely on top-down control. This perspective recognized the limitations of what individual governments can, institutions, or actors accomplish alone, and the necessity of collaboration for taking on the established water challenges.

4.2.6 Delta Programme & Fund

The Commission's advice resulted in the new Delta Act, which formally anchored the existence of the Delta Program, Delta Fund and the appointment of a Delta Commissioner into Dutch law in 2011/2012 (Rijkswaterstaat, 2017). Established in 2012, the Delta Programme involves collaboration between several government bodies, knowledge institutes, companies, and social organizations to ensure sufficient freshwater and contribute to a climate- and water-proof design of the Netherlands challenges (National Delta Programme, n.d.). Led by the Delta Commissioner and funded by the Delta Fund, it coordinates efforts across various government agencies and external organizations to address water-related challenges.

The programme represents a shift towards a networking and participatory approach, where various government levels collaborate instead of relying solely on top-down control. Unlike traditional centralized policies, it emphasizes the necessity of regional collaboration to integrate water measures with other functions effectively, acknowledging that the national (and regional) government alone cannot address the current water challenges effectively. An interviewee also describes the Delta Programme as a collaboration between *“[...] national governments like the Ministry of [Infrastructure & Water Management], but also [Agriculture, Nature and Fisheries] and [Housing and Spatial Planning], so the space and agriculture side.”*, as well as regional governments, adding that *“[...] provinces, water boards, and municipalities all cooperate.”* (Interview 7). This depiction of a more bottom-up and collaborative governance approach, is echoed by another interviewee mentioning that: *“[...] it is not something that is conceived by the national*

government in The Hague and then deposited with lower authorities. No, this is something that you build together, and that has been an important administrative principle that has always been under the Delta Programme, to this day.” (Interview 1).

In addition to its more collaborative approach to policy development, an important feature of the Delta Programme is its ambition to adopt a proactive rather than reactive policy approach to water management and climate adaptation, in line with the advice of the Second Delta Committee, which states that “[...] *there has to be a programme that looks ahead to 2050. No more reacting to yesterday's storm or current or near-disaster. We need to look ahead.*” (Interview 1).

Building on this proactive approach, the Delta Programme's substantive focus is clearly outlined by one interviewee, who describes it as primarily concerned with the quantitative aspects of water management, like *“too little water and water in the wrong places, in urban areas”* (Interview 1). This focus includes developing policy proposals to protect the country from flood risks and ensure a reliable freshwater supply amid climate change. The programme is subsequently structured around three main themes: water safety, freshwater supply, and spatial planning (National Delta Programme. Three Topics, n.d.). In this context, water safety addresses flooding from the main water systems of the Netherlands, while spatial planning concerns, which overlap with water safety, focus on mitigating flooding, drought, and heat in both rural and urban areas, and protecting vital functions such as energy, ICT, infrastructure, and drinking water production (Van Gaalen et al., 2024).

In alignment with this proactive ambition and structural focus as mentioned above, climate scenarios and emerging knowledge developments play a crucial role in the Delta Programme, as one interviewee describes that the Programme makes sure that *“[...] those sub-programmes come up with proposals for climate adaptation measures. If new insights emerge, for example new climate scenarios, [the core staff] translate[s] them for [the employees working on the sub-themes of the Delta Programme]”* (Interview 7).

Key strategic decisions from within the Delta Programme, known as Delta Decisions (NL: Deltabeslissingen), provide advice for and guidance for policies on water safety, freshwater supply and spatial adaptation to climate change (Ministerie van Infrastructuur en Milieu, 2013). The Delta Decisions are revisited and recalibrated every six years, with the next one planned for 2027, ensuring they are reassessed against *“[...] the knowledge of today, [and whether or not] those decisions made then are still correct.”* (Interview 1), once again underlying the important role of knowledge and its ongoing development within the Delta Programme. One important Delta Decisions mentioned directly or indirectly in several interviews, is the 2017 Delta Decision on Water Safety, proposing an update to the statutory safety standards for primary flood defences, setting a maximum level of acceptable flood risk specified per region and based on the potential consequences in that region (Ministerie van Infrastructuur en Waterstaat, 2018). That same year, the new safety standards were legally enshrined in the Water Act, completing a decades long process, and inducing a new round of assessment of the primary flood defences on a national scale (Rijkswaterstaat, 2017), which will be further discussed in the following section.

4.2.7 Updated Safety Standards and the High Water Protection Program

As outlined in Section 4.1.1, Dutch flood risk management has transitioned from a purely statistical approach to an impact-based model that accounts for societal and economic consequences, as well as climate change (Bosoni et al., 2023; Kind, 2014). This shift, indicated by a majority of the interviewees as a major policy development in the Dutch water safety subsystem, led to the legal update of safety standards for primary flood defences in 2017 and the current iteration of the High Water Protection Program (NL: Hoogwaterbeschermingsprogramma, HWBP), which were similarly named as important policy events.

Since 1996, the Flood Defence Act has legally required water boards and Rijkswaterstaat to periodically assess the primary flood defences under their care and take action if they fall short, with the law later being integrated into the Water Act (Rijkswaterstaat, 2017). This is one of the key reasons the HWBP was established: if dykes fail an inspection and are decommissioned, they will be incorporated into the HWBP for reinforcement projects (HWBP, n.d.). The High Water Protection is an alliance between Rijkswaterstaat and all of the 21 water boards in the Netherlands, working towards having all of the primary flood defences, up to the (new) safety standards by 2050 (HWBP, n.d.). Financed jointly by the Ministry of Infrastructure and Water Management and the water boards, as per the 2011 National Governance Agreement on Water (NL: Nationaal Bestuursakkoord Water), the program is updated annually, and involves collaboration between water boards and Rijkswaterstaat, with a program directorate overseeing implementation, evaluating funding requests, and reporting progress to the minister and water boards. It funds necessary reinforcement measures, except when deficiencies result from poor maintenance (Rijkswaterstaat, 2017; UVW et al., 2011).

In the wake of the financial crisis of 2008, in 2009 the Dutch government sought to improve government efficiency and reduce spending, including in the field of water management by aiming to reduce the national budget by 100 million euros starting in 2011 (UVW et al., 2011). This initiative led to the proposal of a new governance framework focused on cost-saving measures, enhanced water safety, and collaboration between municipalities, provinces, and water boards, ultimately resulting in the creation of the National Water Governance Agreement. Part of a broader agreement on decentralization (NL: Hoofdlijnenakkoord), this agreement aimed to transfer responsibilities for water safety and flood risk management from the national government to local authorities, i.e. the water boards. Its goal was to clarify roles and responsibilities between national and regional entities, decentralize decision-making, reduce administrative complexity, and incorporate climate change considerations into water management strategies (UVW et al., 2011). As a result, the costs for the necessary dyke reinforcements to meet the new safety standards were divided equally between the national government and the water boards. Additionally, the agreement also established a solidarity arrangement between water boards (NL: Solidariteitsregeling), specifying that the aforementioned costs would be shared by water boards with and without primary water defences, in light of the collectively felt responsibility felt for ensuring water safety in the Netherlands.

The update to the safety standards in 2017 is meant to ensure a minimum level of flood protection for all Dutch citizens - except those in floodplains - by prioritizing basic safety, mitigating societal disruption from large-scale flooding, and protecting vital infrastructure (Ministerie van Infrastructuur en Waterstaat, 2018). This update represents the culmination of decades of research and planning including the research by the Emergency Spillways Committee (NL: Commissie Noodoverloopgebieden), the research project '21st Century Flood Protection Project' (NL: Waterveiligheid 21e Eeuw, WV21, and "Mapping Safety of the Netherlands" (NL: Veiligheid Nederland

in Kaart, VNK) project (Rijkswaterstaat, 2017).⁴ This update was sorely needed, according to some interviewees: “[...] during the first period of the Delta Programme, there was a discussion about that standard. How safe should every citizen be? Then it turned out that the standards we were using, from the 1960s, did not take into account female victims, for example. No, [women were not considered as] relevant, or an economic factor” (Interview 7).

The new flood risk approach, which forms the foundation of these new standards, places greater emphasis on considering the potential consequences and variations in flooding, making the risk assessment more comprehensive than before. However, according to several interviewees, the spatial component of multilayer safety is under pressure in programs like the HWBP: “The flood protection programme [...] basically, does not focus on spatial measures, so it is for me though if you look at the water safety side, it is again very technical and engineering-based.” (Interview 6). Or, put more plainly: “There are really purists who say: “Dyke reinforcement must come first in everything.” That must be in good order and that is where the money should go, and it should not go to other purposes.” (Interview 3). This means that the HWBP, specifically the latest iteration, is a clear example of the disconnect between policy development, which is highly informed by climate change knowledge, and policy implementation, which is constrained by practical/financial limitations, as mentioned by several interviewees (see Table 1): “All the area-based solutions for dyke reinforcement, [...], you see increasing pressure. Nature-based solutions are being phased out because they are not directly about the dyke itself and there are no other administrative parties willing to take responsibility for linking them in.” (Interview 8). Still, due to increased concern about the effects of climate change, and the increased awareness about the limits of technical solutions, even those most staunchly in favor of dyke-reinforcements are starting to see the value of a multilayer approach: “Even the people planning for dyke reinforcement, who really didn't want to think about a plan B before, are now starting to think about it. They are saying: “Yes, we actually still want to fully commit to dyke reinforcement, but sea level rise is going so fast that we are uncertain whether we can go on with it indefinitely.” Maps are already circulating showing parts of the Netherlands being flooded. Simply because raising dykes higher than an extra 1.5 to 2 metres is simply not going to work. It takes up too much space, you can't get the water pumped over, and the soil behind that dyke is sinking faster and faster. The Netherlands is being artificially preserved this way, and that's just not going to work forever.” (Interview 3).

4.2.8 National Water Plan

In 2009, the Dutch government adopted the National Water Plan (NL: Nationaal Waterplan, NWP) to outline sustainable water management policies for between 2009 and 2015, focusing on flood protection (including multi-layer safety), sufficient and clean water, and various uses of water resources (Ministerie van Infrastructuur en Milieu, 2010; Ministerie van Verkeer en Waterstaat, 2009). The National Water Plan is revised every six years. An update in 2015 incorporated the Delta Decision on Water Safety to accommodate for the new primary flood defence safety standards mentioned

⁴ The Emergency Spillways Committee which was established in 2001 to study the option of deliberately flooding sparsely populated areas in the event of very high water levels, in order to protect densely populated areas, a strategy that was ultimately abandoned as ineffective (Rijkswaterstaat, 2017)(Rijkswaterstaat, 2017). The 2006 research project ‘21st Century Flood Protection investigated ways to limit the flood risk in the Netherlands at a socially acceptable level, thereby providing the main building blocks for the 2017 modification of the norms primary flood defences (Rijkswaterstaat, 2017)(Rijkswaterstaat, 2017). The “Mapping Safety of the Netherlands” project, completed in 2010, also played a significant role by mapping current flood risks and identifying failure mechanisms of primary flood defences (Rijkswaterstaat, 2017)(Rijkswaterstaat, 2017).

above (Ministerie van Infrastructuur en Milieu, 2016). The NWP 2016–2021 outlined several key ambitions: 1) maintaining the position of Netherlands as the world's safest delta, 2) creating a climate-resilient and water-robust country, and (3) fostering water awareness among citizens (Ministerie van Infrastructuur en Waterstaat, 2018; Rijkswaterstaat, 2017). This edition of the NWP included an increased awareness of the effects of climate change and highlights the need to consider climate change effects like extreme precipitation, droughts and heat in spatial planning (Rijkswaterstaat, 2017). The most recent version, the NWP 2022-2027, has a broader focus, meaning it does not just include national water policy, but also integrates management and implementation plans for national waters and waterways, anticipating the enactment of the Environmental Planning Act described below (Ministerie van Infrastructuur en Waterstaat, 2022). Furthermore, this iteration of the NWP places an even stronger emphasis on climate adaptation, reflecting the growing importance of this topic during the period of study. The National Water Plan was not explicitly discussed in the interviews, most likely because it does not represent a policy change in itself but rather offers an overview and description of how the Netherlands plans to address water challenges at a certain point in time.

4.2.9 Environment and Planning Act

The Environmental Planning Act (NL: Omgevingswet) came into effect on the 1st of January 2024 (Rijksoverheid, n.d.). This law consolidated and replaced legislation and regulations related to spatial planning, housing, infrastructure, environment, nature, and water, including the previously mentioned Water Act, except for the parts that ensure the existence of the Delta Programme, Fund and Commissioner (Rijkswaterstaat, 2017). It is intended to serve as the foundation for the integrated management of the physical living environment and its developments, as well as to simplify and improve the legal system by reducing and clarifying regulations, allowing more room for initiatives, enabling local customization, and fostering trust. The Environmental Planning Act was mentioned during several interviews, but due to the fact that it was enacted only recently, the impact this act will have remains largely uncertain.

Part of the Environmental Planning Act is an Integral River Management program (IRM, NL: Integraal Riviermanagement), that is currently in development but will include packages of measures for the Rhine and the Meuse, including concretization of the required space in the river area, and a new framework for Integral Area-Oriented Cooperation (NL: Integraal Gebiedsgericht Samenwerken), and will focus, among other things, on international coordination (Ministry of Infrastructure and the Environment, 2024). The IRM will provide input for the recalibration of the preferential strategies for the Rhine and Meuse from the Delta Program. One interviewee emphasizes that this is no easy task: *“What will you do if the (maximum) height of a barrier is no longer adequate? [...] Is river widening still an option then? Because besides providing more space for water, river widening also offers all kinds of other advantages that a dyke does not. Certainly, for ecology, river widening is enormously valuable. That was also the reason why, about eight years ago, a counter movement arose from the ministry: we have to find an answer to the balance between dyke reinforcement and river widening. That led to the idea of integrated river management, to clarify what that means. But that is still a struggle.”* (Interview 8).

4.3 Coalitions

The next section describes the observed development of the advocacy coalitions as identified by Meijerink (2005), i.e. the Water Safety, Environmental and Fisheries coalitions as well as the emergence of two new coalitions in the Dutch water safety policy subsystem, i.e. the Financial and the Agricultural coalition (see figure 6).

4.3.1 Developments of coalitions identified by Meijerink (2005)

Several interviewees were familiar with the Advocacy Coalition Framework (ACF) and the coalitions identified by Meijerink (2005), with at least one person recognizing the original paper. Most respondents acknowledged the existence of the Safety and Environmental Coalitions, while the Fisheries Coalition was less widely recognized. They also mentioned that for most, but not all, actors in the policy subsystem there is a growing realization that innovation and technical solutions alone are insufficient. There is increasing recognition in several coalitions that an integrated approach, incorporating spatial planning and integrated river management, is necessary for effective water safety policies. However, there is no consensus on how this should be implemented.

Within the Safety Coalition, water safety remains a primary focus, but there are notable differences in how coalition members approach the challenges associated with it, leading to the emergence of distinct factions. One interviewee described the development of two key groups. On one hand, there is a faction focused on optimization - making small adjustments and continuing with the current approach in a more efficient way. On the other hand, a contrasting group, often consisting of former engineers and those with more radical ideas, advocates for bold, large-scale actions. They argue that a complete redesign of the system is necessary to address water safety challenges more effectively.

Some interviewees noted that even the more technically oriented engineers are beginning to recognize the need for broader, integrated approaches. However, others acknowledged that the technocratic faction remains a strong presence within the coalition, prioritizing safety and reliability above all else. This group continues to advocate for solutions that often rely heavily on concrete infrastructure. As one interviewee pointed out, regardless of the material used, the primary concern is ensuring a dependable and well-maintained safety system. Given its enduring influence, this mindset is expected to remain an influential presence within the coalition. At the same time, there seems to be a growing shift toward nature-based solutions within the coalition, with the increasing subsystem-wide recognition of the limitations of purely technical interventions. This faction is focused on exploring alternative, sustainable approaches to water safety, like concepts as nature-based solutions.

The Environmental Coalition has been noted in several interviews to be a vocal presence in the water safety policy subsystem. Natuurmonumenten, specifically, was mentioned several times in this context and as one of the 'larger' stakeholders in this coalition. In addition to this, according to several interviewees, there has also been a recurring trend of smaller, more locally focused environmental or nature groups becoming involved in policy implementation processes. A notable example is the Civillian Collective Dreumelse Waard (NL: Burgercollectief Dreumelse Waard). This citizen collective played a crucial role in exposing pollution risks from the infilling of the Dreumelse Waard, collecting vast amounts of data through Citizen Science. Their efforts eventually led to the cessation of similar infill projects across the Netherlands (Interview 9).

The limited recognition of the Fisheries Coalition might be due to the absence of major developments or events in coastal or flood defence policy in recent years. One interviewee noted that if significant discussions or decisions about coastal protection were to arise, they would expect the Fisheries Coalition to reemerge quickly.

Advocacy coalitions in the Dutch Water Safety Policy Subsystem (2004 -2024)






	 SAFETY COALITION <small>Present</small>	 ENVIRONMENTAL COALITION <small>Present</small>	 FISHERIES COALITION <small>Inactive</small>	 FINANCIAL COALITION <small>New!</small>	 AGRICULTURAL COALITION <small>New!</small>
FOCUS	Engineering & reliability	Ecology & sustainability	Livelihood & access	Investment & risk	Land use value & livelihood
KEY ISSUE	Ensuring and prioritising flood protection and water safety, often through large-scale engineering projects, over other concerns	Advocating ecological concerns, opposing interventions disruptive to nature, and ensuring sustainability.	Protecting fishing livelihoods and access to water resources amid water safety policy changes.	Managing (perceived) investment risks, insurance, and flood damage coverage amid rising climate threats.	Defending farmland use and rights in the face of spatial planning shifts in water safety policy.
OBSERVATIONS & DEVELOPMENT	Still focuses on flood safety, with factions advocating for either technical optimization or a system redesign; possibly shifting towards nature-based solutions.	Vocal presence with regional and national stakeholders, citizen initiatives, and nature-based organizations advocating for sustainable, integrated water policies.	Less prominent recently but could reemerge if coastal protection discussions become more active again.	Concerned with economic risks from increased flood risk and climate change uncertainty; discussing differentiated tariffs in flood-prone areas.	Emerged from the overlap between water safety and spatial planning, driven by concerns over nature-based solutions' impact on agricultural land, livelihoods.
COALITION MEMBERS	Directorate-General for Public Works & Water Management, Minister responsible for water management, the Cabinet, the majority of the Dutch Parliament, local governments, water boards, engineers	Public officials responsible for environmental and nature policies, local and national politicians, scientists, NGO's (e.g. Natuurmonumenten), local environmental clubs, environmental activists	N.A.	Investors, industrial sector, companies, international finance sector, banks, insurance companies	Farmers, agricultural organisations, local and national politicians

Figure 6. The development of advocacy coalitions in the Dutch water safety policy subsystem, adapted from Meijerink (2005) based on expert interviews.

Importance of scale when discussing coalitions

In river restoration projects, conservation priorities can create unexpected conflicts, often shaped by the scale at which stakeholders operate, as remarked by an interviewee. Hypothetically, a larger party such as Natuurmonumenten might propose a large-scale project along a river, ensuring fish habitats every five kilometres to support species like the stickleback. However, a local ecology group might oppose this plan because it overlooks a small wetland vital for salamanders, beavers, and rare dragonflies. While Natuurmonumenten prioritizes a broader and large-scale ecological vision, the local group fights to protect a specific habitat in their surroundings. Although both stakeholders could technically be part of the same (umbrella) Environmental coalition, differences in scale and focus can lead to shifting alliances. In cases like these, local activists and tourism stakeholders may find themselves opposing major conservation organizations that collaborate with engineering firms.

This hypothetical dynamic highlights the importance of scale when analysing stakeholder coalitions (Interview 9). Theories like the Advocacy Coalition Framework (ACF) must be adaptable to different levels to remain applicable. Many alliances identify as "nature" or "safety" organizations, but their interpretations of these terms vary widely. Being explicit about the scale at which coalitions are examined is crucial, as it influences how ACF concepts can be applied and to what level of detail.

At a national or water sector level, broad coalitions primarily reflect overarching societal developments and discourses rather than detailed stakeholder interactions. These coalitions often function as umbrella movements, within which more specific alliances and subdivisions emerge. Understanding these distinctions is essential for grasping the broader context in which stakeholder groups operate and how their influence manifests across different levels of governance.

Shifts in Core Beliefs and Policy Values

Discussions on specifically the belief system of coalitions and underlying values were not a major focus in the interviews. However, some general observations about evolving values in the water sector, particularly regarding water safety, did emerge. There is a broad consensus that cooperation between different actors is essential to safeguarding the Netherlands, whether they are connected to government, civil society, NGO's or the private sector. Both the Environmental and Safety coalitions were said to recognize the importance of collaboration to achieve shared goals.

Another notable shift in perspective is the growing realization across coalitions that innovation and technical solutions alone are insufficient. There is increasing recognition that a more integrated and multi-disciplinary approach is necessary for the development of effective water safety policies in the face of increasing complexity of issues and challenges facing the water sector, including the uncertainty of climate change, for example, by focusing more on integrating spatial planning as a core part of water safety policy and using approaches integrated river management. The idea can be encapsulated in the formula: "*Alpha plus Beta plus Gamma equals Delta*," signifying the necessity of integrating social sciences (Alpha), technical sciences (Beta), and policy sciences (Gamma) in managing the Delta (Interview 1). While the Safety and Environmental coalitions still very much operate independently in practice, the overarching recognition of (the need for) integrated, multi-disciplinary approaches have increased their mutual understanding.

Value Shift in the New Flood Risk Approach

A major shift in values is reflected in the updated flood risk approach, which takes a broader, more integrated perspective. Unlike the previous model, which was largely statistical, the new approach considers the potential consequences of flooding, including, for example, loss of life and economic damage. This means that not all water defences are held to the same safety standards, which comes through in the update of safety norms for the primary flood defences in 2017. For instance, dykes protecting densely populated areas are now expected to meet higher safety standards than those safeguarding agricultural land, reflecting a more efficiency-driven mindset as well as the relatively

recent development during the last two decades of acknowledging in the water sector that that a 100% safety guarantee is impossible under current and future conditions.

Shifts in Power Relations

As described in section 4.1.1, the Dutch water safety subsector saw substantial institutional changes between 2004 and 2024, including the reorganization of Rijkswaterstaat (RWS), which shifted from a powerful, technocratic institution to a more limited and public-oriented agency. In other words, this change connects to the reconfiguration of power relations within the subsystem in several ways: managers became more influential at the expense of engineers, the government became more dependent on the private sector due to outsourcing, and the dominance of the safety coalition was r.

Furthermore, with the downsizing and re-positioning of Rijkswaterstaat, regional and local actors, including municipalities and citizen-led initiatives, as well as the private sector and consultancies, gained a stronger voice in decision-making. This decentralization allowed for more diverse perspectives to shape water management policies, contributing to the rise of smaller environmental coalitions and citizen science initiatives, such as the Burgercollectief Dreumelse Waard.

Additionally, this shift altered the dynamics within the Safety and Environmental Coalitions. Previously, large-scale infrastructural projects were primarily driven by state-led initiatives, but with Rijkswaterstaat's reduced dominance, collaborative governance models emerged. This transition has encouraged new alliances between governmental and non-governmental stakeholders, broadening the scope of policy discussions beyond purely technical solutions to include social and ecological considerations.

4.3.2 Emergence of new coalitions

Several interviewees also discussed the emergence of a new coalition focused on economic concerns, specifically the "Triple-A Coalition." This coalition, highlighted in Delta Programme documentation, is geared toward foreign investors and the international community. Its purpose is to ensure that the Netherlands remains seen as a safe investment destination. If the country were to experience large-scale floods, it could damage the Netherlands' reputation, making international loans more expensive and potentially discouraging companies from investing or settling there. Within this context, there are two distinct interests within the coalition. Some companies are drawn to the coalition for investment purposes, while others, such as land-bound industries, are concerned about flood-prone areas.

Additionally, there may be another financial coalition—although it's unclear whether this group overlaps with the Triple-A Coalition—that involves banks and insurance companies. These entities are reportedly discussing differentiated tariffs for homes and buildings in flood-prone areas. One interviewee shared that banks and insurance companies are already having internal discussions about this issue and are looking to the government for guidance, seeking clear norms to navigate these concerns. Another interviewee, however, mentioned that the government is reluctant to collaborate on this matter, primarily from a principled standpoint, arguing that it is the government's fundamental duty to ensure the safety of its citizens. Additionally, one interviewee raised the issue of "water justice," questioning how to fairly implement such policies considering socio-economic factors.

Lastly, several interviewees noted the emergence of an Agricultural Coalition, following the increasing overlap between water safety policy and spatial planning policy, and potentially reviving debates about the value of agricultural land. One interviewee pointed to an excessive focus on nature development during programs like *Room for the River*, where large areas of farmland were converted into nature, often with insufficient consideration for the impact on local communities, as a potential explanation for this development. While economic concerns may partly drive this coalition, it remains unclear whether it would align with financial coalitions or form a distinct group. However, strategic alliances between these coalitions could emerge.

5. Discussion

5.1 Main findings

This study investigated how the Dutch water safety policy subsystem has evolved from 2004 to 2024, particularly under the influence of neoliberalism and climate change. The analysis of policy documents and expert interviews revealed that within the policy subsystem, the consistent recognition of water security as a core governmental responsibility has persisted, and technical solutions such as reinforcing primary flood defences are still the primary focus of many projects. Simultaneously, the Dutch water safety policy subsystem underwent significant changes during this period. The key developments identified in this study include a transition from a purely technical, flood prevention-oriented approach to a more comprehensive, multi-layered flood risk management strategy – a process which started in the 1990s but really picked up speed in the early 2000s. This shift is driven by growing recognition of the limits of engineering solutions in the face of existential threats due to climate change. The introduction of the multi-layer safety concept (NL: *meerlaagse veiligheid*) in 2009, which integrates flood defences with disaster preparedness and spatial planning, highlights this evolution. Initiatives such as the "Room for the River" program exemplify this shift, reflecting a move towards water safety policies that incorporate ecological restoration and spatial planning.

The influence of climate change on policy development in the water safety policy subsystem has increased during the study period, which is largely due to the existential threat it poses to the Netherlands as a coastal country that is largely situated in different river deltas. Different climate change effects such as increased precipitation and increased riverine discharge, as well as increased periods of drought increase the risk of flooding and societal disruption, and increasingly urgent reports about the risks of climate change have prompted the development of water safety policies that aim to proactively adapt to the evolving environmental conditions. Meanwhile, the fact that climate change is a politically sensitive topic has resulted in the politicization of water safety policy development, which means that decision-making in this policy subsystem has become more complicated, resulting in a certain lack of administrative courage. Compared to climate change, the impact of neoliberalism on the policy subsystem is not directly related to the content of the policy developments as much, partially because the Dutch government has a duty of care towards ensuring water safety, which means this policy subsystem is not influenced as much by processes like privatization. However, there was a significant impact on the policy implementation process, because the increased decentralization distributed responsibilities among different government bodies, which blurred the lines of accountability and responsibility, and led to challenges in coordination (NL: *centrale regie*), a lack of decisive action, and a disconnect between policy development and execution, complicating the execution of the intended integrated approach to water safety management. This process is further complicated by the increased emphasis on individual responsibility, as it increases the aforementioned blurring of accountability and responsibility due to overlapping municipal and individual duties, and information for individuals is scattered and inaccessible (Bergsma et al., 2012). Furthermore, funding mechanisms and policy frameworks have been developed with a heavy emphasis on efficiency and technical solutions, which shapes the priorities in practice in a more indirect manner and sometimes causes a disconnect between policy development and policy implementation.

This study also clearly demonstrated that although the advocacy coalitions identified by Meijerink (2005) - specifically the Water Safety and the Environmental Coalitions - continue to function as separate coalitions, there is also growing recognition that they need to cooperate with each other. The increasing complexity of the challenges facing the water safety policy subsystem, particularly those related to climate change and evolving flood risks, has highlighted the necessity of a more integrated approach. Both coalitions are beginning to acknowledge that technical solutions alone are no longer sufficient, which is reflected in the reduction of the decisive power of the Water Safety coalition. There

is a shared understanding that incorporating spatial planning and nature-based solutions into water safety policies will be crucial for addressing these challenges, which means these coalitions began having discussions about what can be done where, and which land can or can't be used for economy/housing/agriculture. These discussions resulted in the emergence of the new Agricultural Coalition, as they directly impact agricultural stakeholders, because their economic stakes are highly intertwined with land use, just like the actors in the Fishermen's coalition were economically impacted by the debate around the closing of the Easter Scheldt estuary. Another coalition that emerged during the study period is the Financial Coalition, which arose in response to economic concerns in relation to water safety in the Netherlands. The Financial Coalition has two main streams: one focused on international finance and investors aiming to maintain the Netherlands' reputation as a safe investment destination (i.e., the Triple-A status), and the other involving insurance companies and banks discussing differentiated tariffs for properties in flood-prone areas.

5.2 Interpretation of the results

The key findings of this study are largely in line with previous research about the impact of neoliberalism and climate change on Dutch water safety policy and the Dutch water safety policy subsystem. In this study, the impact of neoliberalism was operationalized as the effects of privatization, decentralization, and the role of the private sector, on the water safety policy subsystem. The interview data suggested that privatization has had limited influence on the Dutch water sector, where public governance remains dominant, though debates about privatization in this sector continue (Kuks, 2006; van den Berge et al., 2021). However, budget cuts, government restructuring, and a reduction in the number of public sector employees - particularly engineers and experts - have led to an increased reliance on the private sector, including consultancies, for policy implementation (Burchard-Levine et al., 2024; van der Brugge et al., 2005). For example, the restructuring of Rijkswaterstaat (RWS) in the early 2000s reduced its workforce from 11,300 employees in 2003 to 8,800 in 2006, leading to a significant brain drain as engineers and specialists moved to consultancy firms (Goverde, 2012). This shift aligns with the adoption of a New Public Management (NPM) approach, introducing market-based and client-contractor models for project development in the Dutch Water safety policy subsystem (van Buuren et al., 2012). As a result, managerial approaches have gained prominence over engineering-based decision-making in the Dutch Water Sector (van den Brink, 2021). Finally, the continuing tendency towards decentralization had the largest impact on the policy subsystem, with responsibility for policy implementation shifting partially from the national government to regional authorities, such as water boards, including the financial responsibility for maintaining primary flood defences. The interviewees mentioned a number of consequences of decentralization, including governance fragmentation leading to blurred roles, a disconnect between policy development and implementation, and decision making challenges, which are also mentioned in the literature on this topic (Huitema & Meijerink, 2014; Rogers et al., 2023; van der Brugge et al., 2005).

When looking at climate change, multiple authors have noted that the effects of climate change have become increasingly important drivers for policy development in the Dutch water safety policy subsystem, which is in line with the findings of this study (De Graaf et al., 2009; Fisk et al., 2024; Ritzema & Van Loon-Steensma, 2018; van Doorn-Hoekveld et al., 2022; Vink et al., 2013). According to our results, this is partially due to the fact that climate change related events like the (near) floods of '93 and '95 and the 2003 dyke breach at Wilnis functioned as external shock events to the policy subsystem, which according to the ACF can act as a catalyst of major policy change (Jenkins-Smith et al., 2018; Meijerink 2005). Indeed, the potential of floods to act as shock events and drivers of policy change has been described for water safety policy subsystems in several countries (Albright, 2011; Gralpeois et al., 2016). However, previous literature has described that external shock events to the

Dutch water safety policy subsystem have increased awareness of the importance of effective flood protection, but did not necessarily lead to major policy change (Meijerink, 2005; van der Brugge et al., 2005). Furthermore, a recent review of 67 applications of the ACF to climate change policy only briefly mentioned the role of climate-related disasters as external shock events (Gabehart et al., 2022). In this regard, the current study deviates from the previous literature, because according to the interviewees, the aforementioned climate change-related external shock events influenced the major policy change in the shift from 'fighting with the water' to 'living with the water', as exemplified by the Room for the River program and subsequent integration of spatial quality into Dutch water safety policy thereafter. Additionally, because climate change is inherently linked to water safety, it introduces uncertainty into the water safety policy subsystem and policy discussions, as it is an intrinsically uncertain (both scientifically and existentially) and politically sensitive topic. According to our results, this has resulted in the politicization of water safety as a policy topic. Indeed, climate change counter-movements, often linked to the fossil fuel industry and conservative/populist politics, have strategically amplified climate-related uncertainty to shape public perceptions in some countries, making it harder to build consensus for policy action (Gozgor, 2022; Kukkonen et al., 2017; Kulin et al., 2021). This deliberate emphasis on uncertainty reinforces existing challenges, as uncertainty in mitigation costs and climate impacts already creates incentives to delay decisions, even though some uncertainties will only be resolved after substantial mitigation efforts are underway (Otto et al., 2015; Smith & Stern, 2011).

According to our results, the increasing awareness and acknowledgment of, and adaptation to climate change in the Dutch water safety policy subsystem and water safety policy since the 1990's have led to the recognition of several limits, both in the water and soil system. Relying solely on technical solutions that guarantee 100% water safety is no longer thought to be feasible in the face of climate change and the challenges that it poses, which has contributed to a major shift from a purely technical to a more integrated and multi-disciplinary water safety approach, emphasizing spatial quality, multi-goal policies, and bottom-up governance, including impact-based flood risk management. Indeed, according to previous research, the Dutch flood risk management is gradually evolving to incorporate elements of the risk-based approach, more effectively including spatial planning into water management in order to reduce the impact of floods (Kaufmann et al., 2016; van den Hurk et al., 2014; van der Brugge et al., 2005; van Doorn-Hoekveld et al., 2022; van Rijswijk et al., 2016).

Within the ACF, the processes leading to such transitions are operationalized in Policy Change Hypotheses (PCHs) (Jenkins-Smith et al., 2018). As mentioned in section 2.1.4, PCH2 states that major policy change is unlikely unless the dominant advocacy coalition loses power or is overridden by a superior jurisdiction (Jenkins-Smith et al., 2018). The only major policy change event identified in this study was the 'spatial turn', which occurred at the beginning of the study period, when spatial quality was integrated into Dutch water safety policy next to water safety and ecological concerns, as illustrated by the development of the Room for the River program. This major shift matches PCH2, because it aligns with the reorganization of Rijkswaterstaat (which is part of the Safety Coalition according to Meijerink (2005)) at the beginning of this century, which lessened its dominance and reshuffled power relations in the policy subsystem. Additionally, the Room for the River program resulted from a core planning decision by the central government and, accordingly, involved both significant hierarchical steering on program goals as well as a more active approach to stakeholder engagement. PCH1, on the other hand, posits that significant internal or external perturbations, policy-oriented learning, or negotiated agreements are necessary but not sufficient conditions for changes in the policy core attributes of a governmental program (Jenkins-Smith et al., 2018; Weible & Nohrstedt, 2012). This was also observed clearly in the period of study, for example in the policy developments surrounding the Delta Programme, the adjustments of the water safety standards, and subsequently the High Water Protection Program, where external events (e.g. the 2021 Limburg floods or the

political shift from the reign of the VVD to the PVV and BBB), policy-oriented learning (i.e., climate change knowledge development), and negotiated agreements (e.g. acknowledgment of limits to technical solutions and the water and soil systems) were all driving factors. However, in these cases there was no power shift or hierarchically steered policy change leading to a major policy transformation. This is in line with a study suggesting that the 2017 legal adjustment of the water safety standards is 'a refinement of the existing risk approach rather than a fundamental broadening of the horizon' (Rijcken, 2017).

The Punctuated Equilibrium Theory (PET) is an additional framework that might help explaining policy stability and change in the Dutch water safety policy subsystem (Meijerink, 2005). It outlines distinct phases in policy adaptation, where periods of stability or incremental change are punctuated by brief but significant policy shifts. Initially, policy stability is maintained through a powerful policy monopoly, underpinned by widely accepted policy images tied to core political values (i.e., equilibrium) (Baumgartner et al., 2018). However, when policy opponents successfully craft new policy images and strategically engage in "venue shopping" - seeking support in higher administrative levels - this can lead to a radical shift in policy (i.e., punctuation) (Baumgartner et al., 2018; Pralle, 2003). Following this change, a new policy monopoly often emerges, leading to a subsequent phase of stability until another external shock or redefinition of issues triggers further adaptation (Baumgartner et al., 2018). While Punctuated Equilibrium Framework (PEF) traditionally identifies two main phases (i.e., equilibrium and punctuation) the results of this study seem to indicate that a four phase version of the PEF is more accurate, when describing policy change and stability in the Dutch water safety policy subsystem:

- **Stability & Incremental Change:** small adjustments occur within the system. According to Meijerink (2005) policy stability in this phase might be attributed due to institutional inertia.
- **Disruption:** a crisis or shift in public opinion creates a window of opportunity.
- **Rapid Change (Punctuation):** major policy changes happen suddenly, followed by stabilization.
- **New Equilibrium & Stabilization:** attempts are made to institutionalize the new policy image/paradigm, and if this succeeds, a new policy monopoly is created. If not, the previous policy image remains dominant, having resisted the change.

These four phases enable the description of the policy change processes in the Dutch water safety policy subsystem as a pendulum, which was an image that was used or recognized by several interviewees and also came up as an image for moving between forest policy narratives (Winkel, 2014). The Dutch water safety policy subsystem is perpetually in motion on a number of different axes, as it is embedded in the larger Dutch society, and is therefore influenced by pendulum movements that occur elsewhere in the system. Since the 1980s, the political pendulum has moved towards neoliberalist hegemony and now seems to be moving in the direction of right-wing conservative populism (Fieldman, 2011; Fremstad & Paul, 2022; Gozgor, 2022; Kulin et al., 2021; Rodrik, 2021). Under the influence of the increased dominance of neoliberalist ideology, pendulum in the water safety policy subsystem has been moving, on the axis of governance and public administration, towards a more decentralized approach to policy implementation. However, as described above, there has been a growing demand for more centralised policy solutions in the water safety policy subsystem, alongside a broader resurgence of political ideas that advocate for increased state authority (i.e. populism). Simultaneously, on the climate-related axis, the pendulum has been moving through different phases of awareness, acknowledgement, and adaptation. Interviewees mentioned that in the 1990s, there was an incremental increase in societal awareness of climate change, partially driven by external events (i.e. floods, extreme precipitation), culminating in the general acknowledgement of the changing climate around the turn of the century, which is in line with the process as described in the literature (Dewulf et al., 2017). The 2000s then saw a phase of rapid adaptation, driven by scientific consensus and urgent political discourse. However, in recent years, the pendulum has swung back

toward resistance and denial, as the collective sense of urgency has waned at the societal level - though for scientists and policymakers, it remains as pressing as ever. Also, populist narratives and political reluctance to make difficult decisions have led to stagnation, preventing a full commitment to long-term climate adaptation. This movement has been documented in the literature as well (Biesbroek et al., 2011; Dewulf et al., 2017; Fremstad & Paul, 2022; Vink et al., 2013). In connection to these pendulum movements, the Dutch water safety policy subsystem has moved between different policy approaches. The 1980s and 1990s marked an incremental shift toward an integrated, multiple-goal approach, incorporating participatory policy development. This shift was institutionalized during the 'spatial turn' in the early 2000s, as described above. However, more recently, attempts to integrate proactive climate change adaptation and subsequent spatial planning considerations into water safety policy have been met with resistance from the socio-political arena, as the Dutch water safety policy subsystem struggles to balance climate change urgency with public expectations and societal support (NL: maatschappelijk draagvlak).

This resistance to climate adaptation policies can be linked to broader societal trends, including rising uncertainty on the global stage, declining social security, and existential concerns about climate change. Psychological research suggests that humans are naturally inclined toward predictability and security, resisting change even when the status quo is ultimately detrimental (Gigerenzer, 2010; Toomey, 2023). Populist politicians exploit this fear, offering simplified narratives and clear-cut solutions to complex problems, insinuating that it is not just possible, but desirable, to return to the old status quo (Kulin et al., 2021; Rodrik, 2021). A recent example of this tactic is the renaming of Integrated River Management (IRM) to Room for the River 2.0 by Minister of Infrastructure and Water Management, Barry Madlener (PVV). While one interviewee acknowledged that IRM was not a perfect name due to its ambiguity, they also saw the rebranding as symbolic politics - an effort to align with a known and accepted policy framework rather than embracing new, potentially more comprehensive approaches. Furthermore, decentralization has a compounding effect on these difficulties, as responsibility for policy implementation and financing is partially delegated to local governments, and widespread difficulties in mainstreaming adaptation policies at the municipal level have been observed, further hindering effective responses to climate risks (Baack et al., 2024; Rogers et al., 2023). In fact, Rogers et al. (2023) stated that: "lack of support from local government elected leaders is the most frequently identified barrier to municipal adaptation". Finally, despite efforts to integrate spatial planning into Dutch water safety policy there are still substantial challenges and uncertainty around the effective incorporation of spatial planning. Cross-sector collaboration has historically been constrained by the dominance of the water sector, which ensures that collaboration is feasible only to the extent that it does not compromise flood safety (Avoyan & Meijerink, 2021), and concerns have been raised about the state and functioning of institutions in the spatial planning domain, potentially hindering effective water management (Meijerink, 2021). Moving forward, according to several interviewees, a more centralized and coordinated approach may be necessary to navigate these challenges, because without such coordination, the effectiveness of water safety policy implementation may be compromised, leaving the Netherlands vulnerable to the increasing risks posed by climate change.

5.3 Limitations

The results of this study must be interpreted in light of several limitations. Firstly, the sample size was limited to 13 interviews. However, information saturation was reached around the eighth interview, suggesting that additional interviews may not have significantly altered the findings. Second, one of the recordings was partially corrupted. However, extensive notes were taken during the interviews, and given that information saturation had already been reached, the impact of this issue on the overall findings is expected to be minimal. Third, while efforts were made to ensure diversity in interviewee

backgrounds, time constraints limited the inclusion of a wider variety of experts. As a result, the majority of the interviewees had an academic background, and most of them were clearly in favor of the integration of spatial planning into water safety policy development. No members of the Agricultural or Financial coalitions were interviewed. Fourth, this thesis was designed as a broad exploration of the current state of affairs rather than an in-depth case study. While this approach effectively captures overarching trends, a more focused study - such as an in-depth examination of a specific project like Room for the River - could provide richer insights into policy implementation in practice. Additionally, the impact of the “spatial”, “neoliberal” and “democratic” shifts mentioned in section 4.1.5 could be investigated further, as this was beyond the scope of this thesis. Fifth, the study primarily focused on policy development, with only limited discussion of coalition dynamics. While coalitions were addressed, a more detailed exploration of their role - particularly of the emerging Financial and Agricultural Coalitions - could offer deeper insights into ongoing discussions and bottlenecks. Finally, while interview data and literature provide strong indications of causal relationships, some conclusions rely on interpretative analysis rather than direct empirical validation. Future research employing quantitative methods or longitudinal studies could help further substantiate these connections and refine our understanding of the mechanisms driving policy change. Despite these limitations, this study lays the foundation for further research and serves as a starting point for more in-depth investigations into coalition dynamics and policy evolution within the Dutch water safety policy subsystem.

5.4 Recommendations

Future research could build on the findings of this study by further exploring the evolving dynamics between the Safety and Environmental Coalitions, particularly as both groups increasingly recognize the need for collaboration despite their historical separation. Investigating how these coalitions can effectively work together within an integrated, multi-disciplinary framework could provide valuable insights into the potential for cross-coalition cooperation in the water safety policy subsystem. Additionally, this study identified two new coalitions, and more focused research on their influence and strategies could help to deepen our understanding of how these coalitions shape the policy landscape as well as the discussions and issues they are linked to (i.e. Financial Coalition and the economic aspects of about water safety as well as the Agricultural coalition and land use valuation and spatial planning debates). Finally, exploration of specific case studies, like the Hight Water Protection Program, could offer practical insights into how policy changes unfold at the implementation level and help clarify the challenges of integrating technical and nature-based solutions in real-world contexts, striving to overcome the policy development and implementation gap.

5.5 Conclusion

The results of this study indicate continuous motion in the Dutch water safety policy subsystem, between 2004 to 2024. The most important shift in the study period is the one from a purely technical, flood prevention approach to a more integrated, multi-layered water management strategy is evident, reflecting the growing recognition of climate change’s existential threats. While technical solutions remain important, the inclusion of spatial quality and planning, nature-based solutions, and the Delta Programme exemplify the ongoing struggle to give climate change an embedded place in water safety policy. Due to the challenges posed by decentralization, fragmented governance, and the politicization of water as a policy subject, the study emphasizes the need for a more coordinated, adaptive, and long-term approach to water safety. Future efforts should focus on enhancing cross-coalition collaboration, addressing implementation gaps, and ensuring public engagement to foster resilient water safety policies.

6. References

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Appendix A: List of Expert Interviews

Supplemental Table 1: Anonymised List of Expert Interviews

ID	Sector / Expertise	Date	Method
00	Academic, Water Governance	22-10-2024	Expert Interview (digital, semi-structured)
01	Former Senior Official, Water Policy	17-12-2024	Expert Interview (digital, semi-structured)
02	Research & Management, Governance	18-12-2024	Expert Interview (digital, semi-structured)
03	Public Sector & Academia, Water Policy	18-12-2024	Expert Interview (digital, semi-structured)
04	Academic, Social & Environmental Studies	20-12-2024	Expert Interview (digital, semi-structured)
05	Advisory, Climate & Water Management	08-01-2025	Expert Interview (digital, semi-structured)
06	Senior Management, Water Policy	06-01-2025	Expert Interview (digital, semi-structured)
07	Academic, Planning & Water	14-01-2025	Expert Interview (digital, semi-structured)
08	Advisory, Stakeholder Engagement & Water Projects	13-01-2025	Expert Interview (digital, semi-structured)
09	Academic, Water Resource Management	15-01-2025	Expert Interview (digital, semi-structured)

10	Advisory and Technical Management, Water Policy Implementation	16-01-2025	Expert Interview (digital, semi-structured)
11	Independent Consultant, Water & Nature	17-01-2025	Expert Interview (digital, semi-structured)
12	Program Management, Water Safety	17-01-2025	Expert Interview (digital, semi-structured)

Appendix B: Informed Consent Form

Statement of Informed Consent

Thesis title: *Navigating the current Currents: Exploring stability and change in Dutch water safety policy (2004 – 2024)*
 Researcher Name: Loes Beijers
 Supervisors Name: Georg Winkel
 Department: Forest and Nature Policy Group (FNP)

Study Background

You are being asked to take part in a study. This is a study about exploring the developments (or stability and change) in Dutch water safety policy (and the water sector) in the period from 2004 – 2024 as well as the (potential) driving factors behind these developments.

You are being asked to participate because of your knowledge of and experience with water management, water policy, the Dutch water sector and/or governance processes. Given that this research is part of a MSc thesis project it has not been reviewed by the WUR-Research Ethics Committee, but ethical issues have been discussed with the supervisor. Before signing, please read this form and ask any questions.

What is being asked of you as a participant?

You are asked to participate in an interview. The interview will take approximately 45 – 60 minutes to complete. Your participation in this study is completely voluntary. You may choose not to answer any part of the study or stop taking part at any time without any negative consequences to you. To stop participating, simply inform the researcher during the interview or afterward via email.

Are there any benefits for participating?

There are no direct benefits to you from taking part in the study. Your input will be important to research and specifically this thesis project by improving our knowledge of developments in Dutch water safety policy and our insights into the Dutch water sector. Your input is important to these discussions. The information from this project will be shared with the participants through e-mail in the form of a (summary of) thesis report.

Are there any risks in participating?

This study poses little risk to you. You may stop participating and answering the questions at any time.

The researcher will remain mindful of the potentially sensitive nature of topics discussed, such as political views, personal opinions, and professional observations, and will handle the provided information carefully to avoid any negative impacts on participants.

How will your information be handled?

During this study we will collect the following information from you: name, voice (through audio recordings after explicit consent from the participant), e-mail (only to be used for correspondence),

job title/working background, as well as personal or professional opinions and insights in regards to the questions discussed in the interview.

The research data will be stored in the OneDriveWageningenUR cloud during the duration of the thesis research project, and the final data will be stored in the FNP drive, i.e. the Forest and Nature Policy Group drive. According to WUR policy, data underlying a publication are required to be preserved for at least 10 years. Access to the data will be restricted to the researcher and supervisory team.

The research data will be used as part of a Master thesis. In the thesis report, the interviews will be listed in annex in an overview of all conducted interviews. For this overview, the following information/format will be used:

Surname, Initial, (date of interview). Function/organisation. [expert interview]

Participants have the option to indicate if they wish to be further anonymized (e.g., by being given a pseudonym), although full anonymity cannot be completely guaranteed. The participant's name will not be used for direct quotes unless explicit permission is obtained beforehand.

What if I have questions about the study, or change my mind?

Participants can withdraw from the study at any time during or after their participation and request the removal of their information, although complete removal may not be possible if it would significantly harm the research.

If you have any further questions, concerns or would like to withdraw from the study, please contact Loes Beijers (e-mail: loes.beijers@wur.nl). After completion of the research project, please contact office.fnp@wur.nl.

If you have additional questions regarding your rights as a research participant, please contact the Research Ethics Committee of Wageningen University - Email address: rec@wur.nl

You are entitled to have the abovementioned information destroyed at your request, both during the research and while in storage, in line with the GDPR's right to erasure provision

I consent in participating in this research and to the use of my personal data as described.

_____ Yes, I would like to take part in the research.

_____ No, I would not like to participate in the research.

Please sign your name:

Date:

Signature:

Appendix C: Interview Script

A. Welkom

Nogmaals hartelijk dank voor uw tijd en uw bereidheid om mee te werken aan dit interview. Het leek me goed om te beginnen met een korte introductie van mezelf en mijn project, dan een korte introductie van u en uw achtergrond, de inhoudelijke vragen en als laatste een algemene afronding.

Mijn naam is dus Loes, ik doe de Master Bos-en Natuurbeheer aan de WUR. Ik heb daar ook de gelijknamige Bachelor gedaan, maar dan met een ecologie specialisatie. Tijdens mijn studie kwam ik er gaandeweg achter dat ik toch nog iets miste en dat 'pure' ecologie 'm toch niet helemaal voor mij was. Dus op een gegeven moment ben ik me meer gaan specialiseren in de richting van communicatie, onderwijs en procesfacilitatie naast de 'standaard'/verplichte studievakken. Na mijn vakken ben ik eigenlijk door mijn stage ecologisch advieswerk en omgevingsmanagement bij een consultancy op een nieuwe manier met de watersector in contact gekomen.

Dat heeft er via via deels tot toe geleid dat ik bij mijn huidige thesis onderwerp uit ben gekomen, namelijk dat ik onderzoek doe naar verandering en stabiliteit in de Nederlandse watersector in de afgelopen 20 jaar, en dan met name kijkend naar waterveiligheidsbeleid. Ik kijk daarbij ook naar de rol en invloed van verschillende (maatschappelijke) trends zoals klimaatverandering en bestuurlijk benadering zoals New Public Management, decentralisatie en daarbij ook naar de rol van de private sector in dit geheel.

1. *Zou u een u misschien een korte introductie van uzelf, uw achtergrond en hoe u bij de watersector betrokken ben geraakt, kunnen geven?*

B. Toestemming voor opnames maken

Als het goed is heeft u hier ook bericht over gehad d.m.v. het 'Informed Consent' formulier via de mail, maar toch voor de volledigheid:

2. *Voordat we verder gaan, vind u het goed dat dit interview opgenomen wordt?*

C. Inhoudelijke vragen – deel 1: ontwikkelingen en drijfveren

Het inhoudelijke onderdeel van mijn vragen, heeft eigenlijk twee delen, namelijk een eerste deel dat gaat over de algemene of brede ontwikkelingen in het Nederlands waterbeleid en de watersector van de afgelopen 20 jaar, en mogelijke bijdragen factoren.

Als tweede onderdeel heb ik een aantal vragen gebaseerd op een artikel van Sander Meijerink uit 2005 waarin hij stabiliteit en verandering in Nederlands overstromingsbeleid heeft onderzocht van 1945 tot 2003. In dat onderzoek heeft hij verschillende 'beleidsperiodes' geïdentificeerd en daarbij verschillende stakeholder coalities die ieder op hun beurt beleid proberen te beïnvloeden op de manier die zij 'juist' achten. Ik zal hier later op terugkomen en verdere toelichting over geven.

Om te beginnen met het eerste inhoudelijk deel:

3. Als u kijkt naar de afgelopen 20 jaar, dus van 2004 tot 2024, wat zijn dan volgens u de belangrijkste beleidsontwikkelingen in de Nederlandse watersector geweest, en dan met name op gebied van waterveiligheid?
4. Wat denkt u dat de belangrijkste drijvende krachten dan wel factoren achter deze ontwikkelingen zijn? Kunt u daar voorbeelden bij noemen? (Denk bijvoorbeeld aan: gebeurtenissen, politieke verschuivingen of bijvoorbeeld maatschappelijke ontwikkelingen.)

In mijn onderzoek kijk ik verder onder andere naar de invloed van belangrijke dan wel invloedrijke trends op waterveiligheidsbeleid en de ontwikkeling ervan, zoals dus klimaat

veranderingen en bestuurlijke benaderingen, zoals bijvoorbeeld New Public Management/meer markt-gestuurd en gedecentraliseerde bestuurlijke benadering.

5. Hoe heeft klimaatverandering het waterveiligheidsbeleid in Nederland beïnvloed (in de afgelopen 20 jaar)? Zijn er specifieke gebeurtenissen of trends die de beleidsvorming hebben beïnvloed?
6. Hoe hebben bestuurlijk benaderingen en trends, naar uw inzicht, (ontwikkelingen in) de Nederlandse watersector en het waterveiligheidsbeleid van de afgelopen 20 (à 30 jaar) beïnvloed? Denk hierbij, bijvoorbeeld, aan New Public Management, decentralisatie en de rol van de private sector naar aanleiding hiervan.

D. Inhoudelijke vragen – deel 2: coalities

Het volgende inhoudelijke deel van het interview, en een deel van mijn thesis, is dus gebaseerd op een artikel uit 2005 waarbij de auteur heeft gekeken naar verandering en stabiliteit in de Nederlandse watersector en overstromingsbeleid in de periode van 1945 tot 2003. Hij heeft daarbij o.a. verschillende beleidsperiodes geïdentificeerd, maar voor dit interview nog relevanter is dat hij ook drie stakeholder- of actor-coalities heeft geïdentificeerd.

7. Heeft u enig idee van wat er met een stakeholder- of actor-coalitie wordt bedoeld?

In dit geval verwijst een stakeholder- of actor-coalitie naar een samenwerkingsverband tussen verschillende partijen in de samenleving. Deze partijen werken samen op basis van gedeelde kernovertuigingen en ideeën en vertonen gecoördineerd gedrag, met als doel invulling te geven aan beleid en beleidsopgaven in lijn met hun overtuigingen en ideeën.

Meijerink heeft drie verschillende coalities geïdentificeerd: de Veiligheidscoalitie, de Milieu&Natuur-coalitie en de Visserscoalitie. Ik zal kort de kenmerken van deze drie coalities samenvatten. In dat kader ben ik benieuwd naar uw mening over de volgende vragen:

8. Is de analyse van deze coalities vandaag de dag nog relevant? Ontbreken er belangrijke actoren of thema's? Anders gezegd: wat zou u willen bevestigen, aanvullen of corrigeren van deze analyse als u naar de huidige watersector?
9. Herkent u een dergelijk patroon in de praktijk?

(Stel vraag 10 na het bespreken van vraag 8 en 9.)

10. Hoe zou u zeggen dat de privésector er tegenwoordig bij betrokken is? Ziet u de rol van de privésector in deze context? Denkt u dat ze betrokken zijn of zouden kunnen zijn bij deze of andere coalities?

Veiligheidscoalitie

Samenstelling:

- Vertegenwoordigers van het Ministerie van Verkeer en Waterstaat
- De verantwoordelijke minister en het kabinet
- Een meerderheid in de Tweede Kamer
- Verschillende regionale overheden, en boerenorganisaties

Doelen en overtuigingen:

- Voorstanders van grootschalige kustwerken zoals dammen in de riviermondingen (Delta Plan)
- Hierbij primair gericht op bescherming tegen overstromingen.
- Secundair belang bij economische aspecten (*zoals scheepvaart en watervoorziening voor de landbouw*).

- Echter geen aandacht aan ecologische impact.

Milieu&Natuur-coalitie

Samenstelling:

- Verschillende wetenschappers en milieubewegingen
- Sommige ministeries (van o.a. milieu- en natuurbeleid)
- Verschillende regionale en nationale politici

Doelen en overtuigingen:

Visserscoalitie

Samenstelling:

- Vissers economisch afhankelijk van schelpdiercultuur in de Oosterschelde
- Regionale en nationale politici die hun belangen behartigden

Doelen en overtuigingen:

- Voornamelijk economisch belang, gericht op economisch zelfbehoud en het voorkomen van banenverlies door sluiting van de Oosterschelde.

E. Afronding

In ieder geval bedankt uw tijd en uw inzichten. Ik denk zeker dat dit nuttige input gaat zijn voor mijn thesis.

Ter afronding lijkt het me nog goed om een aantal zaken te benoemen:

1. Als eerste, ik zal u, wanneer ik wat verder ben met mijn dataverwerking, een kort overzicht met de initiële 'highlights' van ons gesprek sturen. Dan kunt u kijken of u het daar mee eens bent, of niet.
2. Ten tweede, bij het schrijven van mijn verslag zal ik nooit directe quotes van u gebruiken zonder daarvoor van tevoren toestemming van u voor heb gekregen.
3. Als laatst, ik kan u, indien u dat interessant vindt, aan het einde van mijn thesis de samenvatting van mijn onderzoek toesturen.

Als u verder geen vragen of opmerkingen heeft, dan kunnen we het gesprek hierbij afsluiten, denk ik. Prettige dag nog.

Appendix D: Cabinets and political periods

Cabinets-Lubbers (1982–1994)

As described in the introduction, the adoption of neoliberal policies such as supply-side economic policies and privatization started with the reign of Prime Minister Ruud Lubbers, who belonged to the Christian Democratic Appeal (NL: Christen-Democratisch Appèl; CDA) (Oudenampsen, 2020; *Periode 1982-1994: Kabinetten-Lubbers*, n.d.). The Cabinets of Prime Minister Lubbers were shaped by coalitions between the CDA and the conservative liberal People's Party for Freedom and Democracy (NL: Volkspartij voor Vrijheid en Democratie; VVD) and for the third and final iteration, the social democratic Labour Party (NL: Partij van de Arbeid; PvdA) (*Periode 1982-1994: Kabinetten-Lubbers*, n.d.). The time leading up to the Lubbers I administration taking office was characterised by economic issues and a high unemployment rate, and although while large-scale poverty was prevented by means of the social security system, the large-scale dependency on this system also caused the national budget deficit to increase (*Periode 1966-1982: Polarisatie*, n.d.). Thus, this period is characterized by a focus on restoring job opportunities and reducing the national debt through decreased government spending, meaning budget cuts to various sectors, tax hikes, and welfare state retrenchment (*Kabinet-Lubbers I (1982-1986)*, n.d.; *Kabinet-Lubbers II (1986-1989)*, n.d.; *Kabinet-Lubbers III (1989-1994)*, n.d.). Although unemployment gradually started to decline, during this period the government was met with a lot of public resistance in large part due to the financial-economic policies it pursued (*Kabinet-Lubbers I (1982-1986)*, n.d.).

Purple Cabinets (1994–2002)

Due to dissatisfaction with the CDA and them suffering significant electoral losses, the next period saw the CDA as an opposition party for the first time in decades (*Periode 1994-2002: Paars*, n.d.). Led by Wim Kok (PvdA), the "Purple Cabinets" represented a then unique coalition between traditionally opposing parties of the VVD (liberals = blue) and the PvdA (socialists = red), plus the social liberal Democrats 66 (NL: Democraten '66; D66), illustrating changing political relations and emphasizing pragmatic governance over ideological divides (*Kabinet-Kok I (1994-1998)*, n.d.). Buoyed by favorable economic conditions, the government implemented significant cost reductions for both citizens and businesses. In addition to this, the privatization of sectors such as energy and public housing progressed during this time, accompanied by a relaxation of economic regulations, as well as relaxation of economic regulations (*Kabinet-Kok I (1994-1998)*, n.d.)(*Kabinet-Kok I (1994-1998)*, n.d.).

Instability (2002–2010)

In the 2002 elections, the Purple coalition lost its majority due to the accumulation of economic decline and criticism due to issues with safety, healthcare and education, culminating in the erosion of public support (*Periode 1994-2002: Paars*, n.d.; *Periode 2002-2010: Instabiliteit*, n.d.)(*Periode 1994-2002: Paars*, n.d.; *Periode 2002-2010: Instabiliteit*, n.d.) The rise of the right-wing populist party Pim Fortuyn List (NL: Lijst Pim Fortuyn, LPF) with its leader as an outspoken opponent of the 'Purple cabinets' also played a major role in the political shift (*Dr. W.S.P. (Pim) Fortuijn*, n.d.; *Periode 2002-2010: Instabiliteit*, n.d.)(*Dr. W.S.P. (Pim) Fortuijn*, n.d.; *Periode 2002-2010: Instabiliteit*, n.d.). During the 2002 elections, shortly preceded by the assassination of Pim Fortuyn, the LPF experienced significant electoral gains, and the resulting political fragmentation led to the formation of a new center-right coalition under Jan-Peter Balkenende (CDA), marking the end of the Purple era (*Periode 2002-2010: Instabiliteit*, n.d.)(*Periode 2002-2010: Instabiliteit*, n.d.). Due to the political fragmentation, it becomes increasingly common from this point onwards to need three parties instead of two to form a majority coalition. The LPF joined the Balkenende I Cabinet (CDA, VVD, LPF), but internal divisions within the LPF destabilized the coalition and Balkenende I collapsed after just 87 days (*Kabinet-Balkenende I (2002-*

2003), n.d.)(Kabinet-Balkenende I (2002-2003), n.d.). While the CDA remained a permanent fixture in the cabinets under Jan-Peter Balkenende's leadership, it struggled to maintain consistent coalition partners due to ideological and policy differences and several controversial events (Periode 2002-2010: Instabiliteit, n.d.)(Periode 2002-2010: Instabiliteit, n.d.). Following three center-right cabinets, a Christian-social cabinet was formed, consisting of the CDA, PvdA, and the Christian Union (NL: ChristenUnie, CU) (Periode 2002-2010: Instabiliteit, n.d.)(Periode 2002-2010: Instabiliteit, n.d.).

Cabinets-Rutte (2010–2024)

During the reign of the last Balkenende Cabinet (2007–2010), the Netherlands faced economic challenges resulting from the 2008 global financial crisis, and tensions grew between coalition partners around related to that, but also to immigration policies, and the role of the Dutch military in Afghanistan (Periode 2002-2010: Instabiliteit, n.d.)(Periode 2002-2010: Instabiliteit, n.d.). In the 2010 elections, the VVD led by Mark Rutte capitalized on public dissatisfaction with the previous government's policies, producing the first VVD prime minister (Kabinet-Rutte I (2010-2012), n.d.)(Kabinet-Rutte I (2010-2012), n.d.). Rutte I was formed by a coalition with the CDA, but because the two parties did not have a majority, they depended on the support of the nationalist and right-wing populist Party for Freedom (NL: Partij voor de Vrijheid; PVV), led by Geert Wilders (Kabinet-Rutte I (2010-2012), n.d.)(Kabinet-Rutte I (2010-2012), n.d.). The core tasks this cabinet set for itself were to reduce government spending, increase safety, and decrease the effects of the economic crisis and limiting migration (Kabinet-Rutte I (2010-2012), n.d.)(Kabinet-Rutte I (2010-2012), n.d.). It implemented austerity measures and fiscal reforms to restore budgetary discipline, reduced the welfare state by cutting public spending, and re-evaluated social programs for sustainable finances (VVD en CDA, 2010)(VVD en CDA, 2010). The government also encouraged greater market involvement in public services to boost competition and efficiency, especially for small and medium-sized enterprises (MKB). Putting and keeping governance finances and spending in order would remain a common thread through all of the cabinets in this period (Periode 2012-2024: Kabinetten-Rutte, n.d.)(Periode 2012-2024: Kabinetten-Rutte, n.d.).

Supplemental Table 2: Cabinets of the Netherlands from 1982 – 2024.

Time period	Cabinet	Years	Prime Minister	Political parties in the coalition	Minister responsible for water management ¹	Secretary of State responsible for water management ¹
Cabinets-Rutte	Rutte IV	2022-2024	Mark Rutte (VVD)	VVD, D66, CDA, ChristenUnie	M.G.J. Harbers (VVD)	V.L.W.A Heijnen (CDA)
	Rutte III	2017-2022	Mark Rutte (VVD)	VVD, D66, CDA, ChristenUnie	C. van Nieuwenhuizen-Wijbenga (VVD); B. Visser (VVD)	S. van Veldhoven-van der Meer (D66); S.P.R.A. van Weyenberg (D66)
	Rutte II	2012-2017	Mark Rutte (VVD)	VVD, PvdA	M.H. Geesteranus (VVD)	W.J. Wansveld; S.A.M. Dijkema (PvdA)
	Rutte I	2010-2021	Mark Rutte (VVD)	VVD, CDA <i>(minority cabinet, confidence and support from PVV)</i>	M.H. Geesteranus (VVD)	J.J. Astma (CDA)
Instability	Balkenende IV	2007-2010	Jan-Peter Balkenende (CDA)	CDA, PvdA, ChristenUnie	C.M.P.S. Eurlings (CDA)	J.C. Huizinga-Heringa (CU)
	Balkenende III	2006-2007	Jan-Peter Balkenende (CDA)	CDA, VVD <i>(minority transition cabinet)</i>	K.M.H. Peijs (CDA)	M.H. Geesteranus (VVD)
	Balkenende II	2003-2006	Jan-Peter Balkenende (CDA)	CDA, VVD, D66	K.M.H. Peijs (CDA)	M.H. Geesteranus (VVD)
	Balkenende I	2002-2003	Jan-Peter Balkenende (CDA)	CDA, VVD, LPF	R.H. de Boer (LPF)	M.H. Geesteranus (VVD)
Cabinets-Purple	Kok II	1998-2002	Wim Kok (PvdA)	PvdA, VVD, D66	T. Netelenbos (PvdA)	J.M. de Vries (VVD)
	Kok I	1994-1998	Wim Kok (PvdA)	PvdA, VVD, D66	A. Jorritsma-Lebbink (VVD)	N/A
Cabinets-Lubbers	Lubbers III	1989-1994	Ruud Lubbers (CDA)	CDA, PvdA	J.R.H. Maij-Weggen (CDA); J.E. Andriessen (CDA)	J.E. Andriessen (CDA)
	Lubbers II	1986-1989	Ruud Lubbers (CDA)	CDA, VVD	N. Kroes (VVD)	N/A
	Lubbers I	1982-1986	Ruud Lubbers (CDA)	CDA, VVD	N. Kroes (VVD)	J.F. Scherpenhuizen (VVD)

¹From 1947 until 2010, water management and water safety were part of the responsibilities of the Ministry of Transport, Public Works, and Water Management (NL: Verkeer en Waterstaat). Between 2010 and 2017, these topics fell under the responsibilities of the new ministry of Infrastructure and

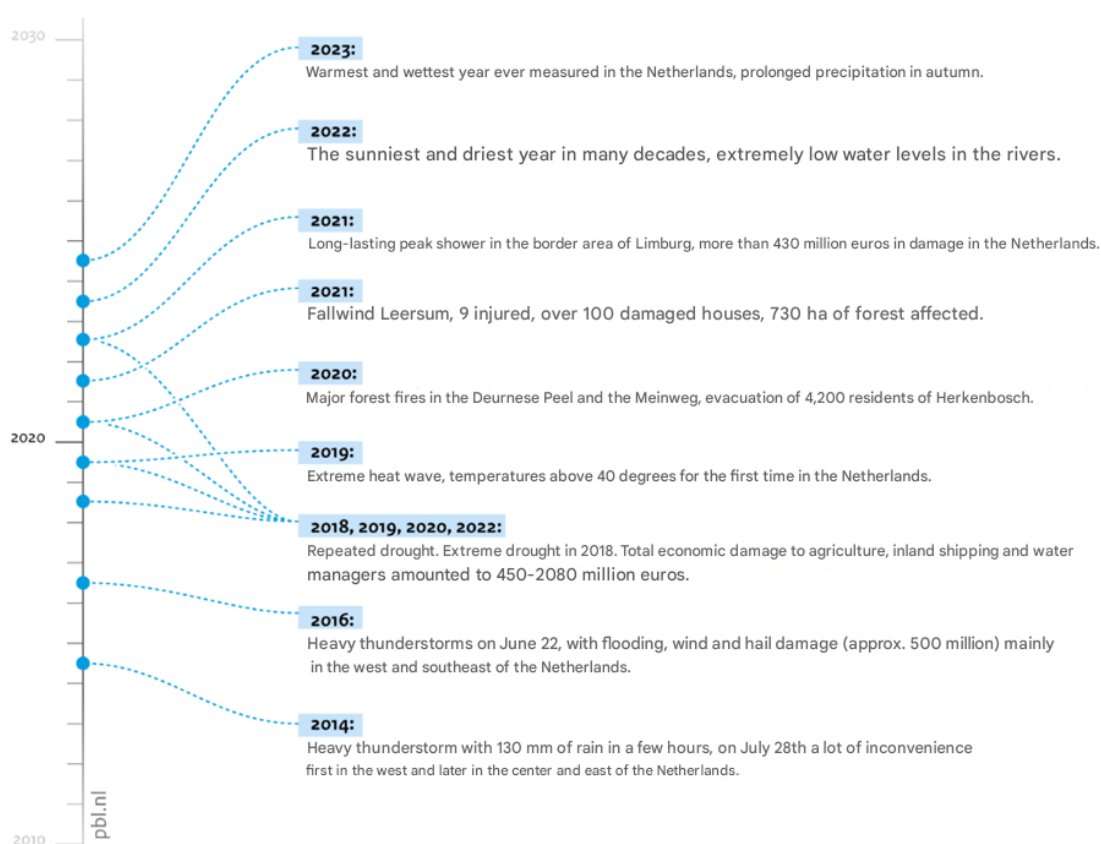
Environment (NL: Infrastructuur en Milieu). After 2017, environmental issues were moved to the Ministry of Economic Affairs (NL: Ministerie van Economische Zaken), but water management and water safety remained part of the ministry of Infrastructure and Water Management (NL: Infrastructuur en Waterstaat).

CDA: Christian Democratic Appeal (NL: Christen-Democratisch Appèl); D66: Democrats 66 (NL: Democraten 66); LPF: Pim Fortuyn List (NL: Lijst Pim Fortuyn); PvdA: Labour Party (NL: Partij van de Arbeid); PVV: Party for Freedom (NL: Partij voor de Vrijheid); VVD: People's Party for Freedom and Democracy (NL: Volkspartij voor Vrijheid en Democratie)

Appendix E: Recent effects of climate change in NL

Recently it has become hard, if not impossible, to talk about water management and water safety policy without talking about climate change, especially in a coastal country like the Netherlands, which is situated in a river delta. In recent years, climate records are being broken at an alarming pace (Van Gaalen et al., 2024)(Van Gaalen et al., 2024). Not only has the weather has become warmer and wetter, as well as drier in summer, in the past 30 years - the speed with which the sea level is rising is also increasing (Van Gaalen et al., 2024)(Van Gaalen et al., 2024). In addition to these gradual trends in temperature, precipitation and regional drought, the likelihood of the occurrence of extremes in heat, drought and precipitation is greater now than it was in 1990 (see Figure 4). The intensity, duration and geographic extent of these extremes have increased, and the trends already observed are expected to continue this century (Van Gaalen et al., 2024)(Van Gaalen et al., 2024).

Extreme weather events and impact in the Netherlands, 2014 - 2023



Supplemental Figure 1. Extreme weather events in the Netherlands. Adapted from (Van Gaalen et al., 2024)

It is safe to say that the sense of urgency about the climate crisis has increased in the period of study. The summer of 2003 was extremely hot and dry, which resulted in an increased number of casualties, and precipitated the implementation of several regulations such as the Netherlands National Heatwave Plan (NL: Nationaal Hitteplan) (van Minnen & Ligtvoet, 2012)(van Minnen & Ligtvoet, 2012), but this was still a rarity. In 2005, the effects of climate change in the Netherlands were still considered minor but predicted to get worse (Bresser et al., 2005)(Bresser et al., 2005). In 2012, the impact was already becoming more noticeable (van Minnen & Ligtvoet, 2012)(van Minnen & Ligtvoet, 2012), but as can be seen in Supplemental Figure 1, the increase in extreme weather events really picked up speed after the drought of 2018 (Van Gaalen et al., 2024).(Van Gaalen et al., 2024).

Appendix F: AI Statement

For the completion of this thesis, I used Artificial Intelligence (AI) in several ways. Firstly, I used the automated transcript function of Microsoft Teams to transcribe the interviews, although I cleaned up the transcripts manually. After that, I attempted to use the (intentional) Artificial Intelligence (AI) coding tool in Atlas TI, but this tool did not capture the nuances of the interviews, and was not effective at labeling my dataset, so in the end I coded all of the interviews manually. I did use the conversational AI function in Atlas TI to generate suggestions when I was analyzing the data, for example by asking it to compare the statements of two or more speakers, or summarizing the main points made by interviewees about certain topics. However, these suggestions were only ever used as a starting point, and I always went through the data myself to confirm whatever the Atlas TI tool came up with. Furthermore, I used generative AI as a tool to support my writing process and improve the overall quality of my text. Specifically, I used the Microsoft Word AI transcription tool to assist with the conceptualization of my ideas by dictating them verbally, after which the tool transcribed my spoken words into text, which allowed me to structure my thoughts more effectively. Finally, after disabling the usage of my conversations for the training of the OpenAI generative language models, I used ChatGPT to improve my sentence structure and overall grammar, and to generate alternative phrasing of specific words. In summary, the usage of AI helped streamline my writing process, but all the ideas, arguments, and final content presented here are my own.

Examples of prompts used:

- [Atlas TI] Can you tell me which policy events (e.g. implement laws, government programs, official/formal decisions) were mentioned by the interviewees? Please do not count the speaker labeled 'LB' among them.
- [ChatGPT] Please improve structure of this sentence: “However, in recent years, the pendulum has swung back toward resistance/denial, as the sense of urgency is the same as ever among scientist and policy makers, but the collective sense of urgency has dropped among the general public, and populist narratives and political reluctance to make difficult decisions have led to stagnation, preventing a full commitment to long-term climate adaptation.”
- [ChatGPT] Can you suggest alternatives for the phrase “was gebaseerd op wetenschap, en zo ethisch mogelijk”?