Brackish Waters: Integrating Justice in Climate Adaptation and Long-Term Water Management

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Lieke Brackel

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Dissertation

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by

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Chapter 1

Introduction

1. Introduction

Brackish is an adjective that entered the English language around the mid-16th century, probably through contact with Dutch fishers and traders using the work 'brak' (Meriam Webster Dictionary, 2020). Brackish water is a mixture of fresh and saline water. The scientific definition is a chloride concentration of somewhere between 0.3 and 0.5 permille, although definitions vary and the boundary between fresh and saline water is vague (Holden, 2014). Other meanings of brackish mentioned in everyday language are worthless, repulsive, and undrinkable.

Depending on what kind of livelihood humans hope to realize from delta waters, the saline character of the water is considered a desirable trait – or a threat. Brackish water occurs in tidal transition zones between sea and inland river systems. The freshwater need for drinking water and freshwater agriculture most likely caused the dictionary understanding of brackish water as 'worthless' (Dinar et al., 2019; Salehi, 2022). At the same time, the dynamics of brackish delta systems allow for rich and diverse ecosystems; think of dynamic mudflats and mangroves, fish and bird breeding grounds, and shellfish banks. Alternative livelihoods may flourish in saltier dynamic waters (Dewan, 2021; Kefford et al., 2016).

The diverging valuation of the saline character of delta waters is just one of many possible examples of how people differ in what they find important in their environment. In some cases, different functions can be accommodated in parallel, but climate change puts increasing pressure on our coastal landscapes. Climate change transforms our world into a world with harsher living conditions for humans (and many non-humans). Droughts, heat waves, saltwater intrusion, extreme rainfall, storms, and floods are expected to intensify and occur more frequently (IPCC, 2022). Climate impacts constrain current livelihoods and ways of living while revealing the need to reconsider what type of land use is most suitable in dynamic deltas. In the future, large-scale land use transformations will be needed to adapt to the consequences of climate change (Haasnoot, Kwadijk, et al., 2020).

1.1 Climate adaptation politics

The Intergovernmental Panel on Climate Change (IPCC) defines climate adaptation as 'the process of adjustment to actual or expected climate and its effects' (IPCC, 2022). To be clear: the best climate adaptation action is climate mitigation. If we could time-travel, climate mitigation actions to reduce greenhouse gas emissions should have started decades ago (Paavola & Adger, 2006). Now, however, as the impacts of climate change increasingly manifest, scenarios of a world with substantive degrees of global warming have to be considered. Climate adaptation planning and decision-making is characterized by a deep uncertainty and a simultaneous need for anticipatory action (Alphen et al., 2022; Dewulf & Termeer, 2015; Walker et al., 2013). Due to the deep uncertainty part of climate adaptation, visions about how much and what kind of anticipatory action is necessary diverge (Haasnoot et al., 2019; Termeer et al., 2017).

The IPCC distinguishes between *incremental adaptation* (adaptation measures with the aim to sustain current practices and 'maintain the essence and integrity of a system or process at a given scale') and *transformational adaptation* ('adaptation that changes the fundamental attributes of a system in response to climate and its effects') (IPCC, 2018; Pelling et al., 2015). People fundamentally disagree about whether current land use practices and ways of life should be sustained or transformed by these climate adaptation measures.

The politics of climate adaptation revolve around disagreements about the preferred course of adaptation actions and which kinds of life and socio-ecological ecosystems to protect under conditions of deep uncertainty (Boutroue et al., 2022; Eriksen et al., 2015; Paprocki & Huq, 2017). Climate adaptation requires public and/or private measures to either sustain current land usage or transform to new kinds of land usage. Difficult choices will have to be made that influence the distribution of risks, losses, and benefits in society and thus prompt questions of justice in climate adaptation (Byskov et al., 2017; Driessen & Van Rijswick, 2011; Heyward, 2017). Examples of such questions include: Who will bear the burdens of system change, maladaptation, or inaction? How and why are people affected differently by climate change and adaptation measures at both the local and global level[1] (Adger et al.,

1 It is important to note that exposure to climate risk is unequally distributed worldwide. The areas and people that contributed the least to the climate crisis face the most severe climate risks (Adger et al., 2006). Examples are droughts threatening food security in the Sahel, stronger typhoons in the Philippines and the recent floods in Bangladesh and Pakistan. Moreover, climate impacts risk reinforcing all kinds of existing inequalities because climate vulnerability is highly unequal and often related to existing inequalities both within societies and at the global level. Take for example the historic inequalities due to colonial extractivism that fueled differences in climate vulnerability between the Dutch Caribbean and the Dutch delta located in Northwestern Europe (Ghosh, 2022; Robinson et al., 2023).

2006; Ghosh, 2022; Robinson et al., 2023)? How do existing inequalities and socio-historical patterns of marginalization affect someone's influence in adaptation politics? What is the scope of justice being discussed – does it include non-humans and future generations or not? Under which conditions can individuals be asked to move for the benefit of the collective? And how can decisions about the trade-offs between multiple important values be made in a fair way?

People's conceptions of justice are varied and often contradictory; hence, the meaning of the multi-faceted concept of 'justice' is contested (Quine, 1979; Rawls, 1993; Sen, 2009). Adaptation controversies often contain multiple competing claims of what would be a 'just' course of action in a specific situation (Barnett, 2017; Lefstad & Paavola, 2023; Thaler et al., 2018; Young, 1998). Climate adaptation politics largely revolve around competing implicit and explicit understandings of justice and fair distribution of influence, burdens, and benefits (Kaufmann et al., 2018; Meisch, 2019; Zwarteveen & Boelens, 2014). Thus, we need to make competing conceptions of justice explicit in adaptation politics and develop ways to evaluate and account for these competing justice claims in climate adaptation ethics.

1.2 Research objective

The overall objective of this research is to integrate the contested concept of justice in long-term water management and climate adaptation. Climate adaptation is an interdisciplinary theme that deals with the restructuring of people's living environment and land use practices to avoid disasters resulting from too much water (flooding, storms) or too little water (drought, forest fires). To be more specific, this research focuses on questions of justice in controversies about land use change and (in) voluntary relocations that are part of anticipatory state-led adaptation projects at the local level. The research sub-questions are stated below, followed by an explanation and justification of the research scope.

1.3 Research questions

The main research question driving this PhD research is: *'How to integrate competing justice claims in long-term water management and climate adaptation?'* Answering this main research question requires engagement with different bodies of literature to address key concerns regarding justice and the politics of climate adaptation. These concerns give rise to four sub-questions. The first concern is related to the salience of different temporal and spatial scales in future-oriented adaptation planning (Adger et al., 2005). The use of different temporal scales influences the framing of justice and decision-making processes that contain competing claims of justice (Clément et al., 2015; Cooper & McKenna, 2008; Van Lieshout et al., 2017) (RQ1).

Another factor to consider is that science and technology studies and climate adaptation literature describe hydrological systems as intertwined with social, economic, political, technical, and ecological systems (Forsyth, 2004; Gual & Norgaard, 2010; Refulio-Coronado et al., 2021; Van Staveren & Tatenhove, 2016; Zegwaard, 2016). The distinction made in everyday language between 'natural' or 'human' systems is artificial, and concepts such as socio-ecological systems better represent the entangled path dependencies involved in the creation and re-creation of these systems (Cote & Nightingale, 2012; Dryzek & Pickering, 2018b; Latour, 2017; Norgaard et al., 2009). The subsequent question is how to integrate this notion of socio-ecological systems into adaptation ethics (RQ2).

Considering the co-evolution of socio-ecological systems and the political nature of climate adaptation, it is critical to examine approaches to resolving conflicts fairly in adaptation politics. This dissertation therefore addresses the limits and possibilities of procedural justice as it is currently conceptualized in climate adaptation and flood risk management (RQ3). Finally, the capability approach to justice (CA) is potentially well suited to inform the ethics of climate adaptation (Alkire, 2005; Schlosberg, 2012). It is a context-sensitive approach to ethics that is grounded in a comprehensive understanding of (human) wellbeing. In the final two studies, I critically assess and apply the CA to further develop a substantive and procedural account of adaptation justice, specifically with regard to land use change conflicts and state-led relocations at the local level (RQ3, RQ4).

The sub-questions of this dissertation are:

1. To what extent do the spatial and temporal scales of planning methods affect which justice claims are taken-up in the planning process? (CH2)
2. How can the co-evolving nature of socio-ecological systems be accounted for in climate adaptation justice? (CH3)

3. What is the potential of the political capabilities concept to address justice in flood risk management? (CH4)
4. What does a capabilities-based evaluation of state-led (in)voluntary relocations and land use change conflicts in the Dutch delta reveal about experienced injustices? (CH5)

The sections below provide further explanation for the research approach and focus of this dissertation. I begin by discussing different approaches to justice in ethics and explaining my decision to use non-ideal theory integrated with lived experiences as a grounded and context-sensitive approach to adaptation ethics. I then explain my choice to further develop and focus on the CA. This is followed by a delineation of the research scope and choices in my research approach and methodology. Finally, I elaborate on this dissertation's scientific relevance and its contribution to filling knowledge gaps in adaptation ethics. I conclude with an outline of the chapters.

1.4 Integrating justice in climate adaptation and water management

Traditional abstract ethical frameworks, such as the one developed by John Rawls in his *Theory of Justice* (1971), do not always reflect the concerns of citizens and the real-life struggles part of climate adaptation politics (Schlosberg, 2012; Sen, 2009; Siders, 2022). Amartya Sen (2009) therefore introduced a complementary non-ideal perspective of justice. In classical Sanskrit, there are two words for justice: *Niti* and *Nyaya*. *Niti*, the arrangement-focused perspective, is about designing perfect institutions. *Nyaya*, the realizations-focused perspective, is concerned with social outcomes and aims to address manifest injustices in society. Sen (2009) argues that the starting point for thinking about justice in human development should be the empirical injustices that are actually experienced by people.[2]

This dissertation is grounded in the assumption that justice research should start from empirical controversies and prioritize learning from the people who experience injustices, instead of relying only on theorizing and stylized situations. In water management and climate adaptation policy, embracing lived experiences is critical for finding solutions that work within a particular historical and political context (Zwarteveen et al., 2022; Zwarteveen & Boelens, 2014). Researching the messy and contested entanglements in socio-ecological systems on the ground is also where the distinction between descriptive and normative ethics becomes relevant.

2 "A theory of justice that can serve as the basis of practical reasoning must include ways of judging how to reduce injustice and advance justice rather than aiming only that the characterization of perfectly just societies – an exercise that is such a dominant feature of many theories of justice in political philosophy today" (Sen, 2009, p. xi).

1.5 Descriptive versus normative climate adaptation ethics

Descriptive ethics is the systematic analysis of systems of morality: the rules, norms, and codes of conduct put forward by a given society. Normative ethics, in contrast, is engaged with formulating arguments and justifications for a specific normative standpoint about that society. Doorn (2019) highlights that one of the core competencies of ethicists is to 'identify normative issues and separate them out from complexes that have both normative and non-normative components. (Ethicists) can dig out hidden assumptions and nonobvious implications, and…point out alternative standpoints and clarify the differences (Hansson, 2017, p. 11).'

Critical social scientists have shown that many choices in water management are inherently normative (Boelens et al., 2016; Dewulf et al., 2019; Eriksen et al., 2015; Joy et al., 2014; O'Brien et al., 2007). Research in science and technology studies calls for making such normative choices explicit in order to enable democratic contestation and avoid depoliticized technocratic decision-making processes that reinforce existing inequalities (Bijker, 2017; Turnhout et al., 2020; Zwarteveen & Boelens, 2014). Making normative assumptions and political choices explicit is relevant not only for water managers and policy-makers but also for academic researchers.

Studies in political ecology or political geography, for example, provide valuable descriptions of unequal development patterns and root causes for inequalities to illuminate 'who wins and who loses' in climate adaptation and water management (Ajibade, 2022; Ajibade & McBean, 2014; Fox et al., 2021; Götz & Middleton, 2020; Hommes et al., 2016; Lukas & Flitner, 2019). Yet, Przyblynski (2022) notes in his review about the normative assumptions and usage of 'justice' in geographic research that scholars often do not make their specific conception of justice explicit. If social scientists simply call for 'just' adaptation, but do not justify or specify why a situation is just or unjust, they risk attenuating the concept altogether (Przybylinski, 2022). Being explicit and transparent about the values and normative positions underpinning certain claims by social movements or studies helps to reveal the 'politics' part of climate adaptation, thereby avoiding depoliticization, and hopefully strengthening political debate (Barnett, 2018).

Sophisticated and detailed descriptions of systems of morality and unequal development patterns are much needed. However, many descriptive studies in science and technology studies and in political ecology offer little beyond the realization that questions in climate adaptation are inherently normative, and thus political, and they repeat the same conclusion – proven again and again to be true – that adaptation

measures often reinforce existing inequalities and patterns of unequal development. To go further than deconstructing power asymmetries and describing existing inequalities, researchers can also try to intervene, for example by creating avenues for contestation and formulating substantive policy recommendations (Bijker, 2017; Tschakert et al., 2023). In all cases, however, it is critical to analyze and be explicit about the normative assumptions behind research and climate adaptation projects.

Most adaptation scholars use approaches that describe different dimensions of justice, but they often do not provide a substantive explanation about why a situation is (un) just and how the injustice should be resolved. Empirical papers about justice in climate adaptation often build on environmental justice literature and mention three core dimensions of justice: distributive justice, procedural justice, and justice as recognition. They usually refer to Fraser (1995), Young (1990), and Schlosberg (2007) and sometimes extend their analysis with other dimensions of justice such as intergenerational justice, structural justice, ecological justice, or restorative justice (Cañizares et al., 2023; Hickey & Robeyns, 2020; Siders, 2022).

Justice is a multi-faceted concept, so all these dimensions are relevant in describing manifest injustices in climate adaptation politics. However, 'distributive justice,' 'procedural justice,' and 'justice as recognition' are 'empty' denominators. Multiple conceptions of what distributive justice entails are possible, so simply stating that attention to distributive justice is important is not sufficient. A normative choice has to be made regarding the distribution of certain benefits, costs, responsibilities, or risks, and that choice should be clarified and made explicit.

The CA is a normative approach that can provide normative justifications for why a situation is unjust. At the same time, the CA remains flexible, open-ended, and easily adaptable to different contexts: a prerequisite for adaptation scholars, who are often social scientists working empirically. In the next section, I explain my choice to further develop the CA and create a capabilities-based assessment framework in this dissertation.

1.6 A complementary framework: The capability approach to justice

The CA is often mentioned in the literature as a suitable approach to adaptation ethics (Doorn, 2018; Dryzek & Pickering, 2018b; Holland, 2017; Jepson et al., 2017; Kronlid, 2014; Schlosberg, 2012; See & Wilmsen, 2020; Sheller & Leon, 2016; Walker, 2009b). Walker (2009, p. 205) applauds its internal pluralism and ability to incorporate a diversity of necessary forms of justice rather than privileging only one. In this way, the CA is able to acknowledge value pluralism: the assumption that different conceptions of 'the good life' may be equally defendable (Deneulin, 2011; Doorn, 2019; Rawls, 1993). The CA is open-ended and adaptable to different contexts because it leaves room for citizens to choose what they value in life and which capabilities they want to sustain and support. Hence, talking to affected citizens is a key aspect of this type of research into the ethics of climate adaptation, or, as Schlosberg writes, "Adopting a capabilities approach to climate change justice bridges the gap between ideal and abstract notions of climate justice theory on the one hand and the reality of policy-making for adaptation on the other" (Schlosberg, 2012, p. 446). In this dissertation, I investigate the possibilities and limitations of using the CA to assess normative questions in climate adaptation.

A capabilities analysis is concerned with increasing the capabilities or opportunities for all people on earth (Nussbaum, 2011). Some argue that the capability approach is also extendable to non-humans, animals, communities, ecosystems, and future generations, although ethicists disagree on whether this is possible or not (Holland, 2014; Robeyns, 2017; Schlosberg, 2012). The capability approach is an approach and not a theory because it has multiple versions and applications (Deneulin, 2011; Robeyns, 2017). The CA also does not intend to be a fully comprehensive approach to ethics. Its aim is to provide an alternative ethical perspective to evaluate inequalities and promote human wellbeing (Alkire, 2005; Robeyns, 2017; Sen, 2009).

The most applied normative framework for weighing competing justice claims in public policy is utilitarian consequentialism (Doorn, 2019). Cost-benefit analysis (CBA) is one application of utilitarianism frequently applied in Dutch water management (Bos & Zwaneveld, 2017). In the CBA process, different values are made commensurate with economic terms in order to make an assessment, although the normative assumptions behind a CBA are not always made explicit (Cooper & McKenna, 2008; Kind et al., 2017). Problems with this practice of value commensuration are accounting for the differences between intrinsic and instrumental values, discounting the benefits of public policies that accrue to future generations, and difficulties in translating

environmental and societal values into monetary terms (Davidson, 2013; Mouter et al., 2015). These prompt the need to employ alternative normative frameworks that can help to acknowledge value pluralism and the incommensurability of certain values (Doorn, 2019).

The capability approach is one such perspective that helps to bring forward specific values and sometimes neglected aspects of adaptation controversies, such as emotions, value pluralism, the right to self-determination, and the need for differentiated public support. Again, a capabilities-based assessment does not provide a complete ethical framework for addressing all questions of justice that arise in regard to climate adaptation. Nevertheless, the CA does provide pieces to the puzzle and can help to formulate actionable policy recommendations (Alkire, 2005, 2008).

1.7 Research scope and focus

The IPCC identifies three factors that contribute to climate risk: hazard, vulnerability, and exposure (Reisinger et al., 2020). *Hazard* refers to natural hazards such as forest fires, extreme rainfall, drought, or sea-level rise. The concept of *vulnerability* refers to the capacity of individual groups and people to respond to these hazards. Faced with damages or risk due to climate change, those marginalized within their society or those with fewer financial buffers may have more difficulties in responding (Adger, 2003; Adger et al., 2006; O'Brien et al., 2007; Pelling et al., 2015). The third factor in the IPCC model, *exposure,* is to be understood in a geographic sense. Are people or infrastructures located in areas affected by climate hazards? Hazard, vulnerability, and exposure are interconnected, and all three are subject to deep uncertainties (Reisinger et al., 2020).

In this dissertation, I focus primarily on anticipatory state-led climate adaptation planning and exposure reduction measures. Climate risks can be reduced when people or infrastructures are moved out of areas exposed to climate hazards. However, these land use changes are often contested by the people currently living and working on those lands. Anticipatory exposure reduction measures are measures that *prevent* disasters, as opposed to measures that respond to disasters that have already taken place. Considering the deep uncertainties of adaptation politics, the necessity of these measures is often contested. Moreover, even if such measures reduce climate risk, the costs and benefits of these measures are often not equally divided.

Still, anticipatory action and changing land use practices are crucial in mitigating potential harmful effects of climate change (IPCC, 2022). Hence, we can anticipate more conflicts about exposure reduction measures in the future. It is therefore necessary to study what just climate adaptation transitions could look like at the local level. Climate adaptation politics are also present at the global level, most prominently within the United Nations Framework on Climate Change Convention negotiations (Lefstad & Paavola, 2023; Warner et al., 2012; Weinger, 2021). Though global and local adaptation politics are connected (Gupta et al., 2013), in this dissertation I focus on adaptation controversies as they unfold in contestations about the building of infrastructures and change of land use practices at the local level.

A context-sensitive ethics of climate adaptation requires in-depth understanding of the local context and pays attention to historical path dependencies. This helps to situate the grievances and inequalities related to adaptation transitions. It is especially relevant when citizens are involuntarily relocated in the name of climate adaptation, as involuntary planned relocation is a sensitive and often heavily contested exposure

reduction measure (Warner & Wiegel, 2021). Academic literature about involuntary state-led relocations in other coastal areas worldwide and lessons from my research on the Manila Bay Sustainable Development Master Plan led informed this PhD research. However, the majority of the cases discussed in this thesis focus on the Dutch delta, as I am situated in the Netherlands and best acquainted with the Dutch socio-political context. In each of the following research chapters and in the concluding remarks, I reflect upon the generalizability of my insights and the influence of contextual differences on developing an ethics of climate adaptation.

1.8 Research approach and methodology

This interdisciplinary PhD project connects and adds to various fields of study: environmental political theory, science and technology studies, public administration, geography, and applied ethics. Its relevant themes were climate adaptation, water management, and (in)voluntary relocations. Standards for methodological scrutiny vary across disciplines. Hence, scientific journals and reviewers also vary in the level of depth they wish to see in the methodology section. The methodology section of each research chapter is therefore attuned to the journal and research community chosen for each chapter. Each research chapter provides details about the methodology used to underpin the findings of that specific study. In all cases, care was taken to adhere to the principles of prior and informed consent, to care for the (emotional) safety of interviewees, to triangulate findings, and to store data safely. In the conclusion, I provide a personal reflection on creating interdisciplinary research.

This dissertation is an empirical ethical study (Doorn, 2011, pp. 26–30). Philosophers do not always use empirical data to justify their insights, but this thesis leans heavily on qualitative research methods such as interviews, ethnographic observations, and document analysis to inform the ethics of climate adaptation. Involuntary state-led relocation processes are not new, so there are plenty of examples of past buyouts and land use change conflicts. Interviews with people who experienced involuntary relocations aided my investigation of how to best deal with competing justice claims in climate adaptation. At the same time, this dissertation draws from philosophy literature and conceptual analysis to resolve difficult dilemmas in public policy, such as how to integrate justice into long-term water management and climate adaptation. The next section explains the general contribution this PhD project makes to existing academic research.

1.9 Scientific relevance and knowledge gaps

To answer the research questions driving this research, I took insights from science and technology studies about the co-evolving nature of socio-ecological systems and connected them to environmental political theory and climate adaptation ethics. Fine-grained empirical descriptions are relevant to help 'classic' philosophers and adaptation ethics as a field be more attuned to contextual differences and moral dilemmas in adaptation practice. First, following geographic insights about the multiplicity in spatial and temporal scales, this dissertation empirically shows the presence of competing justice claims in adaptation controversies. Addressing spatial and temporal scalar politics should also be a core concern for climate adaptation ethics as a field. In turn, insights from applied ethics and the capability approach literature can help provide a normative basis for calls to realize climate adaptation justice.

Second, even though many authors mention the capability approach as a suitable ethical perspective to address questions of justice in climate adaptation, there are only a few applications available (Holland, 2017; Schlosberg et al., 2017; Sheller & Leon, 2016). Operationalizations of capabilities-based frameworks are lacking for the normative assessment of land use change conflicts and involuntary relocations. See and Wilmsen (2020) and Ensor et al. (2021) use the capability approach as a descriptive framework to describe how inequalities are reinforced in resettlement and disaster risk reduction programs; however, these authors provide neither an explicit normative ethical justification nor a more detailed operationalization of a capabilities-based framework to adaptation justice. This PhD aims to fill that gap and simultaneously reflect on the usability of the CA as a complementary approach in adaptation ethics.

Third, in considering a situation with competing justice claims and departing from the assumption of value pluralism, scholars often turn to a form of procedural justice to resolve disagreements (Rawls, 1993; Sen, 2009). A procedural focus is a pragmatic way forward in adaptation ethics since, given that even if philosophers were to agree on what 'just' adaptation looks like, societal stakeholders who engage with policy-makers would probably still disagree (Holland, 2017). Finding good ways to handle disagreement in the politics of adaptation is critical. However, it is not enough to simply mention 'participation' or 'fair decision-making' as a general principle and solution for achieving just adaptation.

In this dissertation, I aim to go beyond general procedural justice principles to assess realized social outcomes as well. During my research, I delved into the limits of inclusive planning and participation in long-term water management and inequalities in political influence in the informal lobbying phase (Brady, 2015; Edelenbos et al., 2017;

Roth et al., 2017; Turnhout et al., 2020). If climate adaptation is a process of continuous negotiation, as I argue in Chapter 3, procedural justice is important to address conflicts. However, there are grave inequalities in political influence. Most research focuses on improving the capacities of marginalized groups, but we should also investigate how to limit the capacities of actors with 'too many' political capabilities (Brackel et al., 2021).

Ultimately, this dissertation aims to contribute to the debate about just transitions in climate adaptation and land use transitions in the Netherlands and beyond. Anticipating climate risk also means anticipating conflicts about what to protect and what to let go. Not everyone will agree on the necessity of these adaptation measures nor on what 'just' climate adaptation actually means. This research describes the prevalence of competing justice cases in multiple adaptation controversies and at the same time further develops a capabilities-based approach to climate adaptation ethics.

1.10 Outline

The research chapters in which I answer the sub-questions of this dissertation were originally written as journal articles. In chapters 2–5, I present these manuscripts as they were written and published or submitted to scientific journals (see list of publications).[3] The content of these chapters is as follows:

Chapter 2: People in PowerPoint pixels: Competing justice claims and scalar politics in water development planning (RQ1)

Coastal megacities all over the world face challenges related to climate adaptation, ecosystem protection, and inclusive development. In response, governments develop high-level and long-term climate adaptation plans to guide coastal development. In Metro Manila, a consortium of Dutch and Philippine consultants developed the Manila Bay Sustainable Development Master Plan (MBSDMP). The planning team stressed the importance of inclusive and participatory planning, yet the pre-set premises of the master plan, such as the high-level and long-term planning scale and corresponding problem formulation, determined which justice claims were foregrounded in the project, disadvantaging small-scale fishing and informal settlement communities. 'Justice' is a contested concept. Hence, we deploy a critical theory and politics of expert knowledge lens to investigate how struggles over competing justice claims unfold in water development planning. The scalar politics as manifested in the MBSDMP planning process hides particular conceptions of justice while privileging others in congruence with the larger scale uneven political-economic development dynamics. We provide three examples of scale framing in the planning process that functioned to legitimize the contested displacement of informal settlements by pointing to economic development, disaster risk reduction, or environmental protection. Planning design choices involving scalar out-zooming enabled the uptake of these justice claims, while backgrounding the justice claims of negatively affected groups: namely, the urban poor and small-scale fishing communities. The case analysis provides conceptual-empirical insights relevant for coastal cities' grassroots and policy action platforms anticipating climate change impacts and strategizing their stance in the politics of climate adaptation planning.

3 As the first author of these publications, I developed the main philosophical ideas, designed the studies, initiated and managed the research projects, conducted the data collection, and wrote the large majority of these articles.

Chapter 3: Continuous negotiation in climate adaptation: The challenge of co-evolution for the capability approach to justice (RQ2)

The capability approach is increasingly presented as a promising approach for addressing questions of justice in local climate adaptation. In an attempt to integrate environmental protections into the capability approach, Breena Holland (2008b, 2012) developed the meta-capability Sustainable Ecological Capacity to establish substantive ecological limits. This chapter, however, empirically demonstrates that defining ecosystem thresholds in co-evolving systems at the local level is subject to conflict and continuous negotiation. Taking the Haringvliet dam in the Dutch Southwest delta as an illustrative case, I show how people uphold different views about the Haringvliet's most desirable ecosystem state. Future shifts in the socio-ecological system, such as decreased freshwater availability and sea-level rise, are expected to uproot today's compromise about chloride levels in the Haringvliet. This suggests that anticipatory water management should not only address climate impacts but also prepare for re-negotiations of established ecological thresholds. The associated politics of climate adaptation deals with questions about which functions to protect, at what costs, and for whom. Hence, it is critical to integrate procedural justice and attention to political inequalities in capabilities-based adaptation justice frameworks.

Chapter 4: Advancing justice in flood risk management: Leveling political capabilities (RQ3)

Land use change, managed retreat, and relocation programs are examples of exposure reduction measures in flood risk management (FRM). Exposure reduction measures are especially prone to conflict at the local level due to competing interests, values, and attachments. In this paper, we build upon the CA and specifically the concept of political capabilities to advance justice in FRM. A capabilities-based approach to justice in FRM helps to recognize the multiplicity of valuable ways of life, the intrinsic value of self-determination and addresses a wide range of inequalities including concerns related to recognition justice. The innovation of our capabilities-based approach to justice is that we include both actors who have too little political influence as well as those who have too much and can thus excessively steer FRM in their advantage. A political capabilities analysis is different than a focus on principles or rights because it draws attention to realized political influence and includes the informal stages of FRM politics such as lobbying. The political capabilities concept also shifts the focus from vulnerability to human agency, thereby addressing concerns in the FRM literature about the loss of self-determination and misrecognition. The paper concludes with a critical discussion of the opportunities and limitations of using the political capabilities concept in FRM.

Chapter 5: Just transitions in climate adaptation: Assessing state-led involuntary land use change and relocations with the capability approach to justice (RQ4)

Climate risks call for adaptation measures that may involve state-led (in)voluntary relocations. Paying attention to justice is critical in these transitions. The CA is often mentioned as a suitable approach in climate adaptation ethics. However, practical operationalizations of the CA are lacking for land use transitions. In this empirical ethical study, we present a new operationalization of the CA to evaluate local adaptation transitions in terms of justice. We assessed state-led (in)voluntary relocations and land use changes implemented for water management in the Netherlands. Building upon interview data, we present three interrelated questions that help to understand different valued ways of life, expand room for choice, and provide options for differentiated support. Our comprehensive operationalization of the CA leaves room for human diversity, recognizes inequalities in informal lobbying practices, and integrates non-monetary values in assessments of justice, such as the uncertainties that citizens face during land use change processes. Our capabilities-based approach to justice in climate adaptation offers a complementary perspective to other approaches that moves beyond focusing solely on legal rights and resource distributions. As we show, the range of attachments and emotions people experience when their living environment changes needs to be better addressed. Our results support adaptation scholars and sustainability practitioners in better understanding and realizing just transitions in the future.

Finally, in the concluding *Chapter 6*, I reflect upon the four articles as they stand in relation to each other in order to answer the main research question of this dissertation. This final chapter also includes a critical discussion of the research approach and presents avenues for future research.

Chapter 2

People in PowerPoint pixels: Competing justice claims and scalar politics in water development planning

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2. People in PowerPoint pixels: Competing justice claims and scalar politics in water development planning

2.1 Introduction

Manila Bay is surrounded by the fast-growing Manila Metropolitan area, the economic center of the Philippines. As is the case in many coastal megacities, rapid urbanization and industrialization have resulted in several challenges: water pollution, environmental degradation, land scarcity, and growing inequality (Okyere et al., 2015; Valente & Veloso-Gomes, 2020). These challenges are exacerbated by climate risks such as stronger typhoons and sea level rise that aggravate current issues with flooding and land subsidence (Ajibade, 2019). To address these challenges and steer the development of Manila Bay into a more sustainable and inclusive direction, the Manila Bay Sustainable Development Masterplan (MBSDMP) was developed by a consortium of Dutch and Philippine consultants (MBSDMP, 2020). Master plans propose policy measures and present legitimizing narratives that can shape the future of regional development as well as the distribution of risks and benefits across regions and stakeholders. Long-term and high-scale master plans can have significant justice implications as they affect the lives of millions of people living in the planning zone. Zooming out to a region as extensive as the entire Manila Bay risks losing sight of the actual people living in the places depicted in the planners' tools.

This article aims to explore the scale-sensitivity of master plans and their effect on the inclusion and exclusion of certain justice claims. To do so, we 'studied up' on the MBSDMP planning process to see how institutional actors intentionally or unintentionally limit which kind of justice claims are included in the MBSDMP (Barkan & Pulido, 2017; Ferguson, 1994). We focus specifically on the position of the urban poor and fisher communities in debates about the future of Manila Bay. Following Barnett (2017) and Young (1998), we pay attention to how competing justice claims feature and are negotiated in this specific context.

The study shows how the shape and scale of the MBSDMP planning forum and tools influence which justice claims are integrated or backgrounded in water development planning. It demonstrates how scalar politics, specifically the struggles around the employed planning scale, determine which implicit or explicit claims and theories of justice are accounted for. Such a normative-analytical approach to justice in the field of geography can help to distinguish different, hidden, and competing conceptions of justice in development planning (Przybylinski, 2022).

Concerning the practice of Dutch delta planning abroad, our research shows how institutionalized approaches to justice in the MBSDMP can constrain certain justice claims, 'at times even enabling the unjust actions that initiated struggles for justice in the first place' (Barkan & Pulido, 2017, p. 33). While the turn to 'inclusive planning' in the Manila Bay Sustainable Development Masterplan (MBSDMP) was a response to critical claims that a previous planning process in Jakarta failed to address the concerns of the most affected: small-scale fishing communities and urban poor (Bakker et al., 2017). Considering the politics of expert knowledge and power asymmetries is of crucial importance to examine and understand the practice of Dutch Delta Planning abroad, also in the Philippines (see also: Colven, 2020; Hasan et al., 2020; Menga & Swyngedouw, 2018; Minkman & Van Buuren, 2019; Shannon, 2019).

The structure of this article is as follows. Section 2 conceptually relates master planning, scalar politics, and justice claims. Section 3 presents our considerations about methodology and research positionality. Section 4 introduces the case of the Manila Bay Sustainable Development Masterplan and provides its contextual background, including the contested displacement of informal settlements. In section 5 we present an analysis of the scale-sensitivity of justice claims and three examples of scale frames encountered in the discussion about pending relocations of informal settlements. In §6 we discuss what is left out of view due to scalar political dynamics, the risks of scalar out-zooming in development planning for disadvantaged communities, and the limits of invited participatory sessions to remediate these risks.

2.2 Scalar politics and justice claims

In this section, we explain how scale and scalar politics are theorized in geography by scholars working in geographic traditions such as political ecology, historic-materialism, post-structuralism, and urban political ecology. After discussing the so-called scale debates, we delve into the connection between theorizing justice, bottom-up justice claims, and the scale-sensitivity of competing justice claims to situate the theoretical framework of this research.

2.2.1 Scalar politics in geography

Planners choose to work with certain geographic and temporal boundaries to demarcate and situate master plans. For decades, political geographers have stressed that scale is not only socially constructed, but materially and discursively produced within specific socio-economic and ecological contexts (Cohen & Bakker, 2014; Delaney & Leitner, 1997; Dupuits et al., 2020; Norman et al., 2012; Swyngedouw, 2004). In geographic analyses, different scales are not to be understood as nested and static territorial units, rather, scales are fluid, mouldable, and interconnected. Scalar politics is about the engagement within and among dynamically framed multiple connected levels (Massey, 2002).

Actors can connect their struggles to higher/more centrally placed actors or issues by 'jumping scales' and 'creating larger spaces of engagement' (Cox, 1998). Scalar politics, therefore, is intrinsically connected to political-economic geographies (Harvey, 1996; Smith, 1992). At the same time, political struggles and economic changes at 'higher' geographic levels may influence the more local dependencies and interests of actors, most notably the expansion of global capitalism and the influence this has on 'local' interests, such as the job and housing markets (Cox, 1998). A particular geographical structure of social interactions produces space, scale, and cities as 'spaces of difference' (Lefebvre, 1979). Smith would say that: "The differentiation of geographic scales establishes and is established through the geographical structure of social interactions" (Smith, 1992, p. 73). Yet, these social interactions are not ontologically given. In Smith's account of scalar politics, for instance, the patterns of capital investment and capital-labor relations are the most important shaping forces of scale (Idem, p.75). Jones et al. (2017) emphasize the importance of Smith's conception of scale in geography, but also note Smith's account did not sufficiently recognize political processes that exceed capitalism and that it fell short of conceptualizing the crucial role of the nation-state in shaping globalizing capitalism. Next, where Smith and Cox emphasized the influence of global capitalism on local dependencies and interests, Leitner et al. (2007) and Escobar (2001) added localization strategies and attachments to specific place and culture as core notions in configuring 'scale' and scalar interactions (Jones et al., 2017).

Another branch of geography literature started to examine scale in matters of representation: scale frames are deployed by different actors as discursive practices to locate problems, causes, and solutions at particular scales, and to legitimize the exclusion of certain actors and ideas from debates (Jones et al., 2017; Kurtz, 2003; Martin & Miller, 2003). In the wake of Marston's (2005) seminal work on the role of scale in human geography, new scale debates evolved which featured post-structuralist geographers who departed from a flat ontology and conceived of scale not as an ontological category but as 'spatial imaginaries, an analytic for making sense of the world' (Cobarrubias, 2020; Jones et al., 2017).

Others (e.g. Smith) with a more historical-materialist focus feared that an overly post-structuralist focus on discourse would invisibilize or relativize the way in which asymmetric economic relations produce and are produced by scale. This concern is also reflected in urban political ecology (UPE) which stresses the crucial relationship among, on the one hand, the active production and organization of scale and scalar connections, and on the other, the uneven socioecological conditions, asymmetric power relations, and capitalist political-economic system. UPE emphasizes strategic-political acknowledgment in social movements and environmental justice studies (Boelens et al., 2016; Heynen, 2014; Swyngedouw & Heynen, 2003). As Swyngedouw and Heynen (2003, p. 913) put it: "The continuous reorganization of spatial scales is an integral part of social strategies to combat and defend control over limited resources and/or a struggle for empowerment."

While duly integrating ecology and political economy, UPE received criticism for not embracing complementary theoretical perspectives such as the role of discourse, subjectivity, and environmental imaginaries in the constitution of space and scale (Gabriel, 2014, p. 39; Grove, 2009; Robbins, 2012). In response to the scale debates, Mackinnon (2010, p. 28) argues that a middle ground is possible, acknowledging that scale emerges as a result of material production and capitalist restructuring in socio-ecological systems, while also bringing in discourse and struggles over imaginaries and meaning as explanatory factors behind the continuous endeavours to produce scalar configurations (Cobarrubias, 2020; Jones et al., 2017). It matters greatly who are the ones able to define problem statements, formulate meaning and corresponding onto-epistemology, set planning boundaries, and subsequently propose solutions, indicators, and value prioritizations.

Scale frames can be defined as 'the discursive practices that construct meaningful (and actionable) linkages between the scale at which a social problem is experienced and the scale(s) at which it could be politically addressed or resolved' (Kurtz, 2003, p. 89). Following Mackinnon (2010), we acknowledge the larger uneven development

processes at work in a planning context, but also employ the more discursive notion of scale frames to understand how in public debate or policy discussions, actors discursively foreground some aspects of reality in order to promote a particular policy measure or moral evaluation (Van Lieshout et al., 2011). In case of pre-set planning assumptions, these shape the justification of policy measures and tend to reproduce depoliticized biases.

2.2.2 The role of justice claims in scalar politics

Justice is a key concern for many geographers. Harvey (1973, 1996) among others, built on Young's (1990) *The Politics of Difference* to describe the uneven developmental patterns of cities. However, Przyblynski (2022) notes that philosophical justifications of normative positions are rare in geography, compared to applications of the concept of justice as a normative expression of outrage at manifest problems with the aim to steer political action. Justice claims as expressed by social movements match the bottom-up approach of many geographers and the study of how people mobilize to overcome injustice (Barkan & Pulido, 2017, p. 34). Likewise, a concern for perceived manifest injustices, such as uneven outcomes of economic development or unequal distribution of environmental goods, is the basis of Environmental Justice (EJ) movements and EJ scholarship (Schlosberg, 2007). However, as Barnett (2018) and Przyblynski (2022) observe, in the domains of, among others, environmental justice, spatial justice, and landscape justice, too often the concept of 'justice' lacks a normative-analytic foundation. Geographers risk attenuating what 'justice' means when they do not specify the "where", "when", "who", "what", and "how" of justice, for example by justifying their use of a specific conception of justice based on theory or bottom-up justice struggles (Jaggar, 2009; Przyblynski., 2022).

Specifying what is meant by 'justice' is necessary because there can be plural and competing arguments for justice, 'all of which have claims to impartiality and which nevertheless differ from – and rival – each other' (Sen, 2009, p. 12). With the lack of underlying theorization, existing epistemic injustices and the marginalization of other voices may be reinforced (Barnett, 2018). The frequently applied environmental justice framework points to different 'families' of justice claims (i.e. distribution, representation, recognition, and possibly also ecological integrity) (Schlosberg, 2007; Zwarteveen & Boelens, 2014), but competing conceptions of justice within these families are often not made explicit in geographic analysis (Barnett, 2017). Przybylinski's calls geographers to be more explicit about both the normative-analytical and normative-political understandings of justice employed. At the same time, we recognize with Przyblylinksi that normative claims of injustice 'need not be derived from liberal theories alone' (Przybylinski, 2022, p. 9).

We follow Barnett (2017) and Sen (2009) who argue that researchers should start from the justice claims made by people instead of only resorting to theorizing. Injustices as expressed and experienced by people on the ground should be examined and taken as point of departure for further moral reflection (Barkan & Pulido, 2017, p. 39; Sultana, 2021). This focus also avoids the gap between 'perfect justice' and the practical identification (and resolution) of injustices (Pesch, 2021; Sen, 2009) and situates protests against the dominant institutional order as articulations of an 'inner morality'; they cannot be seen as separate from particular situations (Honneth, 1982): "[T]he ideas of justice according to which social groups morally evaluate and judge a social order are more likely to be found in typical perceptions of injustice than in positively formulated principles of value" (ibid, p. 20).

2.2.3 The scale-sensitivity of justice claims and deliberative fora

The last element that is important for our study concerns the scale-sensitivity of justice claims and the deliberative fora in which these claims can be contested. The justice claims that people express are intrinsically scale-sensitive and spatially grounded. Different actors strategically frame the problem of environmental justice at different (geographical) scales of decision-making (Kanger & Sovacool, 2022; Pulido & De Lara, 2018; Van Lieshout et al., 2017). Scale frames influence whose problems and what moral dilemmas are foregrounded (Engels, 2021; Fraser, 2005). Moreover, "'jumping' scales can be an effective strategy to make injustices disappear" (Zwarteveen & Boelens, 2014, p. 151). The boundaries we draw in space and time influence the scope of justice, the perceived relevant community boundaries for moral analysis, and how historical events and environmental concerns are included in justifying narratives. Hence, it is critical to acknowledge the scale-sensitivity of justice claims and assessments of (in) justice in environmental management.

Barnett (2018) urges geographers to focus on the people that invoke justice claims and how these justice claims are tested and justified through processes of deliberation and contestation. Society is to be understood as 'an ensemble of practices of justification' (Forst, 2017), and these practices of justification can be assessed by critical theorists. Justice claims can also be less explicit, when they are reflected in technocratic solutions presented in seemingly objective ways, while still hinting to particular value prioritizations. Hence, critical scrutiny is needed into how contestations between competing justice claims are resolved in a given society and shaped by existing power relations, inhibiting different spatial and temporal scale frames (Walker, 2009a).

To sum up, planning practices are fraught with scalar politics, scale frames and competing justice claims. Justice is inherently plural and one of the roles of geographers is to critically scrutinize different spatial justice claims and to make hidden justice

claims explicit. This requires more attention for the normative-analytical foundations of justice without resorting only to liberal theories about justice. In other words, the study of justice should start from the justice claims that people make and the deliberative fora in which different claims can be contested, are foreclosed, or are brought to the fore. This research is an example how attention to the normative-analytical foundations of justice, as argued for by Przybylinski's (2022), can be combined with a bottom-up approach to justice, as advocated by Barnett (2018) and Sen (2009), among others. It empirically examines how scalar political dynamics influence the process of resolving competing justice claims in the MBSDMP process.

In the remainder of this article, we empirically demonstrate that not only the discursive structure of justice claims and patterns of uneven development are spatial (Fraser, 2005; Harvey, 1996; Walker, 2009a), but the scale of the forum for contestation and debate can also align better with certain justice claims than with others (Weinger, 2021). The spatial boundaries that are set upon the forum designated to resolving competing justice claims influences how these justice claims are assessed. In this case, how the long-term, water-oriented and high-level planning scale of the MBSDMP influences whose justice claims are easier integrated in the planning process. Besides, the process of testing and resolving competing justice claims takes place in a context influenced by historical and economic developments, socio-ecological conditions, adjacent political arenas including parallel government planning and protests on the streets, and existing asymmetries in socio-political relations

2.3 Research approach and methodology

Master planning is widely applied in environmental management and climate adaptation planning (Seijger et al., 2019; Woodhouse & Muller, 2017). The MBSDMP specifically fits within the larger trend of planning processes that are supported by the Dutch government and branded as 'The Dutch Delta Approach' (Minkman & Van Buuren, 2019). Earlier Dutch master planning processes in Jakarta, Bangladesh, and Vietnam have been criticized for insufficient involvement of local groups and neglecting the suitability of the Dutch planning methods in other contexts (Bakker et al., 2017; Evers et al., 2019; Minkman et al., 2019; Stravens, 2018b). In the Netherlands, public debate is ongoing about the question whether the water development projects abroad are a classic case of self-interested economic diplomacy, or a genuine approach to share knowledge and learn together to tackle challenges in urban delta's worldwide (Stravens, 2018a; Zwarteveen, 2018). As Ferguson (1994, p. 181) once put it: "For Westerners, one of the most important forms of engagement is simply the political participation in one's own society that is appropriate to any citizen". As Dutch researchers, we examine the MBSDMP since it came into existence due to economic diplomacy by the Dutch embassy, was partially funded by the Dutch government, and led by a Dutch independent research institute. The MBSDMP should not be understood as a final paper product, nor only as a project with a specific timeframe, but as a process in which different actors interacted in a specific context. The theoretical relevance of studying the promotion and export of a model of planning, is that the pre-set planning design choices of the Dutch Delta Approach were also exported to the Philippines. Yet, the Netherlands is different in terms of ecological challenges, socio-economic conditions, and degree of civic freedoms to protest and criticize government policy. Moreover, the Philippine planning context contained biases, lingering scale frames and legitimizing narratives that could spill-over to the MBSDMP planning process. When a planning method is moved to a different context, it is important to understand the implications the new context has for the process of testing competing justice claims through participatory fora (Barnett, 2017, p. 69).

For this study, data was gathered during three months of ethnographic field work in the Philippines by the first author (October 2018 – January 2019), hosted by a Philippine community-based disaster risk-reduction NGO[1], but independently funded. The

1 The interviews with MBSDMP actors were arranged by the first author independently. To be able to include the perspective of the urban poor and fisher communities on the coastline, the local Philippine NGO employees who wished to remain anonymous were of great help. MSc thesis Brackel (2019) can be consulted for detailed methodological and research ethical considerations.

premise of the field work was to study the MBSDMP planning process in terms of its participatory activities and engagement with the people living in coastal settlements in Navotas, one coastal city part of Metro Manila. We justify the focus on the barangay, the lowest level of government administration, and the controversy about displacement of informal settlements by the realization that these people are usually least influential in policy processes, while they might have most at stake. They are literally living along the waters of Manila Bay and are dependent on the bay's ecological integrity for their livelihoods. Moreover, too often adaptation interventions work to reproduce instead of mitigate the position of disadvantaged communities (Eriksen et al., 2021). Furthermore, the consultants and Dutch government representatives raised the expectation that these groups and their interests would be included in the MBSDMP through a participatory process (Deltares et al., 2021; Nauta, 2018b; Stravens, 2018b; Zwarteveen, 2018).

Ethnographic observations were gathered both at the local level of Navotas and during the high-level MBSDMP planning events. Semi-structured interviews were conducted with 35 interviewees. Two distinct interview guides were prepared. The first for the level of the masterplan about how participation and inclusivity were organized in this long-term planning exercise (Dutch and Philippine consultants, international and Philippine NGO employees, Philippine and Dutch government employees). The second interview guide was for inhabitants of Navotas and dealt with topics such as disaster risk reduction, other concerns they faced in their life, experiences with participation processes, experiences with relocations, and interaction with the government in general (Philippine local government employees, national fisher folk organizers, community leaders from barangay and informal settlements in Navotas and national Philippine civil society organizations). All interviews were anonymized and notes, transcripts and codes stored confidentially. Additional desk research took place until fall 2020 to follow the evolvement of the planning process and triangulate findings from interviews with publicly available sources such as statements on the www.mbsdmp.com website, news outlets and policy documents. The raw data and coded data formed the input for a multi-stage iterative process through which the findings were interpreted and connected with theory about scalar politics.

2.4 The Case: The Manila Bay Sustainable Development Masterplan

2.4.1 The contested future of Manila Bay

The area around Manila Bay covers four provinces and over twenty-five million inhabitants (OIDCI, Tractabel, et al., 2018). Conflicting sectors present in the area are industry, the port and industrial fishing sector, small-scale fishing communities, aquaculture and fresh water agriculture farmers, wetlands and marine reserves, recreation and the tourist sector and urban settlement ranging from social housing, to informal settlements or high-value property development on (proposed) land reclamations. Rapid urbanization and growth of the Philippine capital Metro Manila has resulted in a congested and polluted mega city, with population numbers expected to double by 2040 (OIDCI, Tracetebel, et al., 2020). After decades of internal socio-economic differentiation, also due to legacies of colonialism and imperialism, the Philippines is characterized by high inequality rates (Rodan, 2021). Increased landlessness and extreme poverty in the countryside have pushed people towards Metro Manila and beyond to overseas employment in search of a livelihood (Bankoff, 1999). Land is a scarce resource and affordable housing options are lacking (Murakami et al., 2005; Shatkin, 2017). Subsequently, people are forced to live in hazardous structures in or very near the polluted water of urban drains and Manila Bay (Purba et al., 2018). Many people living in informal settlements also wish for better living conditions, but prefer to stay near their current homes, in order to keep their livelihoods and social structures in place (Interviews 01/11/2019, 01/19/2019, community representatives). At the same time, large financial interests are involved in creating new areas for property development. The 'clearance' of informal settlements near the coastline often has to take place before new land reclamations can be developed (Asare Okyere et al., 2015; Borras & Franco, 2008). Past land reclamation projects, most notably San Miguel's Mall of Asia area, did create space for high-value property development and service sector jobs, but these were realized at the expense of the bays' biodiversity, mangroves and fish stocks and came with the evictions of Informal Settler Families (ISF) (Purba et al., 2018); reflecting the lack of concern by project developers for 'local' concerns (Cox, 1998). Moreover, due to lacking waste- and water management services throughout the watershed, multiple tributaries are characterized as dead rivers. The disappearance of mangroves also contributes to increased flood risk in coastal areas (OIDCI, Tractebel, et al., 2018b). In response to these challenges of ecological degradation, climate risks, and urban sprawl, in 2015, per request of the Philippine government, the Dutch-funded Disaster Risk Reduction Expert Team wrote a mission report that called out the need for a new masterplan for the future of Manila Bay (Dutch Expert Team, 2015).

2.4.2 The Manila Bay Sustainable Development Master Plan

The MBSDMP planning process ran between January 2018 and July 2020. The MBSDMP planning team consisted of a consortium led by Deltares, a Dutch independent research institute and three Philippine consultancy companies. The MBSDMP process is the outcome of Dutch economic diplomacy work to support the Dutch water sector (Dutch Expert Team, 2015; Hasan et al., 2019), and partly funded by the Dutch government. The majority of the funding is contributed by the commissioner: the Philippine National Economic and Development Authority (NEDA) (Deltares, 2018). NEDA's key concern were the approximately 40 (unsolicited) proposals for new land reclamations in the bay area (Interview 01/23/2019, policy officers). The MBSDMP's planning objectives mention inclusive growth, ecosystem protection, climate change adaptation, disaster risk reduction, and water quality improvement. Participation of vulnerable communities and inclusive development were told to be guiding principles of the planning process; both during internal events about the MBSDMP's progress and through external communications on the website (Human Cities Coalition, 2017; OIDCI, Tractebel, et al., 2020b). In our analysis we do not provide a full overview of all conflicts in the planning arena. Rather, we give primacy to the relocation controversy since this reveals a salient connection between planning scale and justice claims.

2.4.3 Debate on relocation of Informal Settler Families

A salient issue in the Philippine context, that we will discuss in the analysis, is the pending displacement of Informal Settler Families (ISF) (Aspinwall, 2019). Informal Settler Families (ISF) is the official Philippine government's term to address people living together in so-called informal settlements. According to a World Bank (2017a) study, one in four of Metro Manila's citizens live in informal settlements. Without aiming to reinforce the label of 'informality', we will use the term ISF as it is used in reviewed documents and policy discussions in the Philippines, and also by civil society organisations (CSOs) representing these groups. Not everyone considers themselves to be Informal Settler Families, although land rights can be unclear and these people may also be at risk of losing their houses (Interviews, 12/13/2018). Even inhabitants of two-story brick-houses can unexpectedly be presented with a claim that they are on private land, and thus illegal, or lose their rights to live in these spaces after a disaster. A respondent:

> *"What happens, is that the barangay is not going to force the people to leave, but in case there is a fire, a fire happens [spontaneous or intentionally started], you will lose all rights to the land. So if your house is destroyed by the fire, you cannot return. The same goes for other disasters such as floods and typhoons. You will just be relocated."* (Interview 12/13/2018, Navotas resident).

The position of ISF and small-scale fisherman regarding space for housing is slightly different but intertwined. The national CSOs for urban poor and fisherfolk have formed an alliance as they perceive their interests are tied. Not all urban poor/ISF living along the coastline are working in the fishing sector. Still, interviewees from CSOs representing the youth, elderly, women, church, red-cross, and the elementary school all stressed that the fishing sector and access to the sea was a primary source of income for many informal settlers along Navotas' coastline. The other way around, some fishers have been fishing in the area for generations, but are also labeled as 'informal settlers', thereby falsely suggesting that they would have migrated only recently to the area. Moreover, data from the World Bank Group (2017a) shows that most informal settlers already live in Metro Manila for ten to twenty years. Only 24,3% of the ISF moved less than five years ago (The World Bank Group, 2017b). This contradicts the wide held assumption in the Philippine public debate that most ISF are very recent migrants from the provinces. One fisherman, born in Navotas in 1941 and with six children that all also became fishers, regards Tangos (South) as his land, because his ancestors also lived there before him. In his perspective, the city has encroached their ancestral fishing grounds. He exclaimed*: "They'll put here, Jollibee, MacDonalds, and where will we live? Heaven?"* (Interview, 11/25/2018).

Relocation processes are not new, but reducing climate risk is a more recent argument used to justify relocations (Ajibade, 2019, 2022). Three types of relocation exist: on-site upgrading, in-city relocation, and off-city relocation. According to the National Alliance of Urban Poor, most community members prefer to stay where they currently live, mostly because of the community's social cohesion and access to livelihood opportunities. When alternative housing within the city is arranged, implementation needs to secure affordable rents, be safe from flooding and with access to livelihoods, something that is often not the case especially in off-city relocation sites. A representative of another urban poor association said during the MBSDMP technical committee meeting: *"We want to stay in the city, please give us space"*.

Regarding the informal settlements located within the three-meter hazard zone, as designated by the Philippine government, extra discussion arises. Critics say that the line of three meter is arbitrarily drawn. Others acknowledge that it is true that the structures built so close to the waters are not safe during typhoons and in times of sea-level rise and that living that close to the polluted water poses health risks. [2] Moreover, living. Nevertheless, the Philippine community-based disaster risk reduction NGO

2 The campaign officer of the National Alliance of Urban Poor of the Philippines, stated that they advocate for on-site relocation or improvements of living conditions, close to a source of livelihood. However, during interviews, officials and consultants, only discussed the options of in-city or off-city relocation.

conducted comprehensive risk assessments in Navotas and showed that the people living within the 3-me hazard zone themselves, consider these disaster- and health-risks as less important compared to the risk of not earning a livelihood and having food on the table. In another part of Navotas, people are living on a graveyard and on a landfill. From the community's 'landscape' risk perspective, [3] livelihood options are always the priority and point of departure, not just water management, disaster risk reduction, or public health concerns (ACCORD et al., 2012).

2.4.4 Parallel government planning: The Manila Bay Rehabilitation Program

On December 11, 2018, while the MBSDMP planning process was ongoing, retired General and now Secretary Roy Cimatu, head of the Department of Environment and Natural Resources (DENR), announced in a speech that 300.000 families were to be relocated as part of the 'Manila Bay Rehabilitation Program' (DENR, 2019; Gascon, 2018; Teves, 2018).[4] The measure to relocate ISF in the name of ecological rehabilitation is not new in the Philippine planning context. The 2008 Mandamus court orders issued that the Philippine government needed to protect Manila Bay under the 2004 Clean Water Act (OIDCI, Tractabel, et al., 2018). Social advocates argue that the Mandamus court orders have been used by local government units to justify pending ISF relocation programs in the name of 'protecting Manila bay' (Interview 12/10/2018, Philippine NGO employee). Protests have also been directed at the low quality of social housing and relocation sites (expensive, far away from livelihoods), which is officially the responsibility of the National Housing Authority. In general, rules for fair procedures and compensation are said to be not well implemented (CARE Philippines & ACCORD, 2020).

The staff of the Manila Bay Sustainable Development Master Plan (MBSDMP) was commissioned by NEDA and did not relate to the DENR Rehabilitation Program from the beginning, but had to interact with the DENR since both authorities were now focusing on 'protecting Manila Bay'. Hence, DENR was seen as a stakeholder, and in January 2019 a stronger mutual association was sought through joining each other's events and shared communications, to support the relevance and possible uptake of the MBSDMP. These events in the planning arena matter as they provide background conditions that influence how measures are implemented (Colven, 2020). Moreover, (negative) frames could spill-over to the MBSDMP consultancy plan that was developed in the same planning context.

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3 Literature on community based disaster risk reduction refers to the need of using a so-called landscape risk approach (ACCORD et al., 2012).

4 Cimatu's speech on December 11th 2018 was witnessed first-hand by the first author. He called for the relocation of 300.000 families as the first measure of the Manila Bay Rehabilitation Program. In January 2019, the number changed in the media to 200.000 families; that is around a million people if every family consists on average of 5 members.

2.5 Connecting scale frames and justice claims in the MBSDMP

2.5.1 The planning scale of the Manila Bay Sustainable Development Masterplan

In our analysis, we discuss the three planning scale choices made for the MBSDMP that stand out: (1) high-level: the political administrative area of the MBSDMP covers four provinces, (2) long-term: the temporal level is set beyond 2040, and (3) the watershed: the ecological geographic level of the MBSDMP is the Manila Bay watershed, with a focus on the coastline. It became apparent throughout the interview process how the boundaries of the scope of the MBSDMP were continuously contested. The consultants reported that it was a challenge to retain focus in the MBSDMP outcomes and activities and stick to the pre-set planning scale: high-level and long-term planning for Manila Bay. *"Some people keep saying you have to look at the post stamp level, others say no, look around you! That is the tension"* (Interview, 01/14/2019, consultant). For example, an association of municipalities outside the National Capital Region and a disaster risk reduction NGO stressed the importance of taking into account the upstream tributaries and thereby extend the scope of the water management plan. *"Waste is not just coming from ISF and business settlements, I was pushing Deltares, hoping we could have a look at both the upstream and the downstream; where the waste is coming from! The larger river system."* (Interview 01/25/2019, Philippine NGO employee). The planning scale of the MBSDMP is the product of contingent choices and was contested, as is illustrated by the previous quotes. Table 1 shows alternative levels on the geographic and temporal planning scale. In the following sections, we discuss the connection between the chosen planning scale of the MBSDMP and scale frames associated with justice claims.

Table 1. Examples of interconnected levels on planning scales

Scales	Levels on the planning scale
Geographic: Political administrative	Barangay[5] – municipality – province – national – regional – global
Geographic: Ecological boundaries	Coastline – bay area[6] – watershed incl. tributaries – global water cycle
Temporal	Far-away past - past – current – near future – far future

5 For this paper, the Philippine political administrative scale is taken as an example. The barangay can equate the neighborhood level, but is organized as an official political body in the Philippines.

6 Manila Bay has been taken as an example. In different contexts, as different range of ecological boundaries can be presented to analyze environmental management problems.

2.5.2 High-level planning

The MBSDMP's planning scale is high-level, covering four provinces and around twenty-five million people. Multiple divergent and conflicting justice claims were made in the (public) debate about relocation of informal settlements (ABS CBN, 2019; Aspinwall, 2019). Yet, the premise of the high-level planning scale matches best with utilitarian justice claims, meaning that the policy decision-making is based on the net benefits for the full aggregation of the societal collective. This way of moral reasoning legitimizes policies that sacrifice the rights and happiness of a smaller number of individuals to enhance the well-being of the majority of a given population. This logic is reflected in the following interview statement:

> *"The mandate of NGOs is to put the Informal Settler Families first [prioritarianism]; that is their role. You cannot blame them for that. It is not productive though.... We need to look at the bigger picture of national development, and then the interest of ISF is just a small bit of the larger picture [utilitarianism]. Government cannot deal with each and everyone, but is there for the national, greater good. What is good for the majority? The middle ground? Some sacrifices need to be made."* (Interview 01/17/2019, Philippine national).

Due to the high-level planning scale, it is easier to foreground justice claims referring to the value of national (economic) development. After all, at this higher level, only the aggregated costs and benefits matter. In principle, any individual harm can be justified if the nett gains are high enough; one important driver behind the uneven capitalist development process in cities (Swyngedouw & Heynen, 2003).

Justice claims focussing more on individual welfare or local stories of grievances are for that reason more difficult to take up when a high-level planning scale is used. After all, a prioritarian planning rationale, in which priority should be given to the people worst off, would require an adjustment of the plan if the plan does not benefit the most disadvantaged people. A worsening of the position of the most vulnerable could not be justified by referring to the nett gains of the project and it may require high-level planners to seriously adjust or even abandon their plan. Notably, scalar politics in combination with high-scale utilitarian lines of reasoning do not always have the same effects. Arguably, alternatives that would sustain more inclusive utilitarian or non-utilitarian conceptions of national development are imaginable, for example including the right to the city for the least affluent. However, in Philippine government documents 'national development' is generally portrayed to happen through (foreign) investments in infrastructure, industry and the services sector, with benefits eventually supposed to trickle down to all (NEDA, 2017; OIDCI, Tracetebel, et al., 2020). Dominant, utilitarian justifications tend to be less explicit about 'justice' simply because they are

the invisible markers of 'normality'; they are often presented as criteria that are more 'objective' than the social justice claims of the most disadvantaged. Yet again, how high-level scale frames are interpreted and for what purposes they are employed depends upon the planning context.

2.5.3 Long-term planning: Displacement in the name of future hazards

The planning team of the MBSDMP has set their timeframe at the year 2040 and refers to disaster risk reduction and climate adaptation in its planning objectives. 'The future' can be used rhetorically both as a reason to justify acting now in order to prevent harm to future generations (Zeiderman, 2016a), or as a way to postpone action by stressing that future impacts are uncertain and not of immediate concern. The MBSDMP upgrading informal settlements report acknowledges the dire situation in which many informal settlers currently find themselves, and presents twenty pages of numbers about ISF who cannot afford regular housing in the city (OIDCI, Tractebel, et al., 2018a). However, the last page with policy recommendations focusses primarily on relocation from hazard zones to prevent risks from flooding and other natural disasters. Furthermore, the proposed key indicator for the policy objective upgrading informal settlements is: 'making the legal easement – a hazard prone area – free from any settlement' (ibid). And the vision on the MBSDMP website reads: 'It is then envisioned that ISF in hazard-prone areas are a thing of the past and waterways and estuaries (sic) are free of obstruction' (MBSDMP, 2019).

The long-term scale frames climate scientists and social movements all over the world express can help to secure rights for marginalized groups and future generations. However, in this policy context, the scale frames associated with climate action functioned to legitimize contested (already pending) resettlements of ISF (Alvarez & Cardenas, 2019). It is true that with possible stronger typhoons and rising sea levels, houses constructed near bridges and the coastline are at risk. However, it is striking that alternative climate adaptation solutions, be it technical flood prevention measures, home improvements or alternative options for on-site or in-city social housing, are backgrounded in national policy communications. A Philippine consultant expressed the following narrative:

> *"The other day we had a meeting with DENR and presented the situational analysis. We told them that we found that 51% of the ISF are living in high-risk areas. In terms of messaging, if people live in high-risk areas, then the only solution is you need to move them out. So, moving them out should not be anchored on the fact that you want to clean the bay. You anchor it on the fact that the government has a responsibility to protect the life and livelihood of people; and therefore, they have to be relocated."* (Interview 01/23/2019, consultant)

In this way, the long-term scale frame referring to climate risks used in the MBSDMP (un)intentionally helps to legitimize the already planned displacement of ISF.

2.5.4 Watershed planning

In line with Integrated Water Resources Management principles, the MBSDMP uses a watershed scale in order to approach ecological challenge in a holistic fashion (Barham, 2001). The MBSDMP also contains an Integrated Coastal Zone Management framework that distinguishes between habitat protection and potential reclamation areas (OIDCI, Tractebel, et al., 2020a). The water-oriented focus of the MBSDMP resulted in the following fore/backgrounding effect with regard to the displacement controversy:

> *"Inclusiveness and the ISF are important, but our big task is to look at what Manila Bay needs. The people are part of the system, but Manila Bay as an ecosystem is much more. We take an integrated perspective, and of course social housing is very important, but in the end that is not what we are here for. As affordable housing is only very indirectly related to Manila Bay".* (Interview 01/14/2019, consultant).

It is not the planning scale itself, but the non-inclusive interpretation of ecological protection that backgrounds the root causes that drive people to live in polluted waterways (Bankoff, 1999; Zeiderman, 2012). Upgrading informal settlements was explicitly included as a planning objective, but this is mostly restricted to providing waste and water management services. Improving waste and water management services would be in the interest of ISF and is even contested, since the provision of public services can help to formalize informal settlements. Nevertheless, the task of providing social housing after relocations is argued to be out of scope of the MBSDMP and delegated to Local Government Units and the National Housing Authority. However, NGOs argue that existing social housing programs and compensation procedures are not well implemented (CARE Philippines & ACCORD, 2020). Hence, additional measures and funds remain necessary to guarantee basic living conditions near livelihoods for the people to be relocated. In interviews (Castelo, 2019) and through advocacy organizations, urban poor indicate that they are not helped by off-city relocation, since compensation and relocation sites provide few livelihood opportunities, and that they would rather stay in their current location to escape the risk of extreme poverty and maintain social connections. This suggests that the ISF make a different risk analysis than the consultants. The communication officer of the National Alliance of Urban Poor, stated during an interview:

> *"There are problems of course with [the water quality of] Manila Bay and the ISF [informal settler families]. We see that. But there is also the problem of housing. The fact that people go to outskirts of the city just to have a home, means there is something wrong in the first place. We should address that."* (Interview 01/17/2019b)

Pointing towards ecological protection or disaster risk reduction can have depoliticizing effects. The measures to reach a certain goal (improved water quality or safety from typhoons) can be presented as if there is no alternative to relocation, which subsequently (falsely) legitimizes displacement of ISF, while people with other political views would choose different measures to 'protect the bay'. An alternative could be to construct safer houses for people in or very near the same location. However, the development of high-value property near the coastline is prioritized. At the end of the MBSDMP planning process, the Dutch dredging company Boskalis announced that they signed a contract for the New Manila International Airport land reclamation project (Boskalis, 2020). This suggests an eco-scalar fix, where the relocations are justified on the ground of ecological restoration, while at the same time indirectly supporting the highly uneven development pathway that caused the environmental problems with pollution and congestion in the first place (Cohen & Bakker, 2014).

In sum, this section showed how long-term, high-scale and water-oriented scale frames (table 2), helped to foreground and legitimize the relocation solution and backgrounded more inclusive policy alternatives.

Table 2. Examples of scale frames

Planning scale	Examples of scale frames
High-level planning	Illustration
Scale	Geographic: political administrative
Level	Regional/National
Scale Frame	"We need to secure national economic development at cost X"
Foregrounds	Aggregated issues related to economic development
Backgrounds	Area specific issues: local issues with ecosystem degradation, pollution, or access to the bay
Justice Claim	'Most benefits for the most people' through economic development (version of utilitarianism)
Long-term planning	Illustration
Scale	Temporal
Level	Long term: beyond 2040
Scale Frame	"People need to be relocated out of hazard zones to adapt to the impacts of climate change"
Foregrounds	Long-term benefits, costs, and risks[7]
Backgrounds	Possibly painful short-term measures, such as relocations
Justice Claim	We need to bear the negatives now to reap benefits in the future.
Water planning	Illustration
Scale	Geographic: ecological boundaries
Level	Manila Bay watershed
Scale Frame	"We have to protect Manila Bay"
Foregrounds...	Aggregated ecological concerns (water quality)
Backgrounds...	Social justice concerns (social housing)
Justice Claim	The need to protect nature for its intrinsic value and/or instrumental value for humans (ecosystem services framing)

7 These long-term risks, costs and benefits can however be calculated and/or based upon on a theory of change. Different options are imaginable such as (1) high-value property development investments trickling down versus (2) restoring biodiversity and fish-stocks for future generations to protect the wellbeing of people, future generations and ecosystems.

2.6 **Discussion:** What disappears from view

Different scale frames functioned to legitimize the relocation of informal settlements in the debate about the future of Manila Bay. False legitimization can occur when something is presented to be the only possible or logical solution to a problem (the so-called TINAs, "there is no alternative"), whereas alternative or additional solutions are also imaginable. It is not that a high-level or long-term planning scale is not useful, or that the MBSDMP planning scale necessarily generates outcomes that are skewed against the interests of the most vulnerable in a society. To recall Mackinnon's argument concerning scalar politics: "Scale itself is not necessarily the prime object of contestation between social actors, but rather an instrument for achieving desired outcomes." (Mackinnon, 2010, p. 21). We understand the Manila Bay Sustainable Development Masterplan as a forum for the contestation of competing justice claims (Barnett, 2017), and have examined how the pre-set planning scale of the MBSDMP matches better with certain justice claims than with others (table 2).

The previous section showed that the framing of community boundaries and temporal scales in justice claims is fluid. For example, a fisherman stressed that his ancestors were already fishing the bays' coasts for hundreds of years, implicitly claiming to have a right to stay in the area (Interview 12/12/2018). Urban poor representatives defend the right to the city of informal settler families by stating that many already live in the city for over 30 years and have no other options (Castelo, 2019; The World Bank Group, 2017a), while other voices in the public debate frame the ISF as fortune seekers that have only recently 'flocked' to the city (Gomez, 2019).

This paper should also not be read as an argument that policy measures that are not in the interest of urban poor and small-scale fisherfolk are always impermissible, for example based upon prioritarian concerns. Rather, the point is that scalar politics can mask these political trade-offs between competing conceptions of justice such as prioritarianism and utilitarianism and reinforce existing biases against disadvantaged groups. Choosing different policy means and other interpretations of root causes can lead to different development plans. For example, the people living near the polluted waters are the ones facing most environmental health risks. However, the health of the people living at the coastline of Manila Bay is not the first concern of the plan and the scale frames discussed. A plan with a high-level and long-term planning scale focused on public health would come up with different solutions; perhaps the plan would still involve relocation, but the timing and choice of locations would be on other terms and steered by different values. The function of analyzing scalar politics is to spot dominant scale frames and their link to the uptake of justice claims and legitimizing narratives in a planning context.

2.6.1 Zooming out: Justifying displacement

Assessing how competing justice claims are resolved always requires paying attention to the position of different actors in the planning context. Processes of depoliticization, distancing, commensuration, and even dehumanization can alter the (moral) weight of justice claims as put forward by marginalized groups (Anders, 1980; Duarte-Abadía et al., 2021; Flaminio, 2021). During the fieldwork, the negative stigma towards the ISF lingering in the planning context stood out. To name a few of the stereotypes assigned to ISF in the media, such as statements that they would be lazy, undisciplined, criminal or fortune seekers. These stigmas were reflected both in the tone of public debate and through side-remarks or stereotypes featuring in conversations. For instance, one interviewee referred to a recurring story that urban poor purposely and cunningly 'cash' compensation money to afterwards settle in another illegal site; while all these people seek is a place to live and provide for their families. Another interviewee talked about a biased policy measure: a local government delivered plastic bags to an informal settlement with the rationale that this would help urban poor behave in a 'cleaner' way, while not addressing the actual problem that there are no public waste management services in the area. An advocate of the National Alliance for Urban Poor said: "*The urban poor in the waterways are treated as nuisances that need to be dealt with, not as people.*" (Interview 01/17/2019b).

During a meeting of the Manila Bay Coordinating Office (MBCO), the DENR secretary Cimatu announced his Manila Bay Rehabilitation Program, with as the primary measure the swift and strict relocation of 300.000 Informal Settler Families. Later that day, a PowerPoint presentation was shown with a map that depicted ISF along the coastline near Cavite, one of the coastal cities (figure 1). By zooming out, the thousands of people living there were reconfigured into seemingly illegal dots that obstruct development plans. The DENR relocation program is more easily justified when the faces and difficulties of the inhabitants have disappeared from view. The risk is that framing and narratives from the parallel DENR planning process spill-over to the (implementation of the) MBSDMP.

2.6.2 Zooming in: Limits to participation due to scalar politics

Participatory activities that included representatives from the urban poor and small-scale fishing communities could not sufficiently mitigate the out-zooming effects of the pre-set planning scale. Much of the general critique on invited top-down participatory settings was also reflected in the MBSDMP (Cornwall, 2008; Pugh & Richardson, 2005). For the purpose of this manuscript, we will specifically discuss the influence of scalar politics on the emancipatory potential of participation.

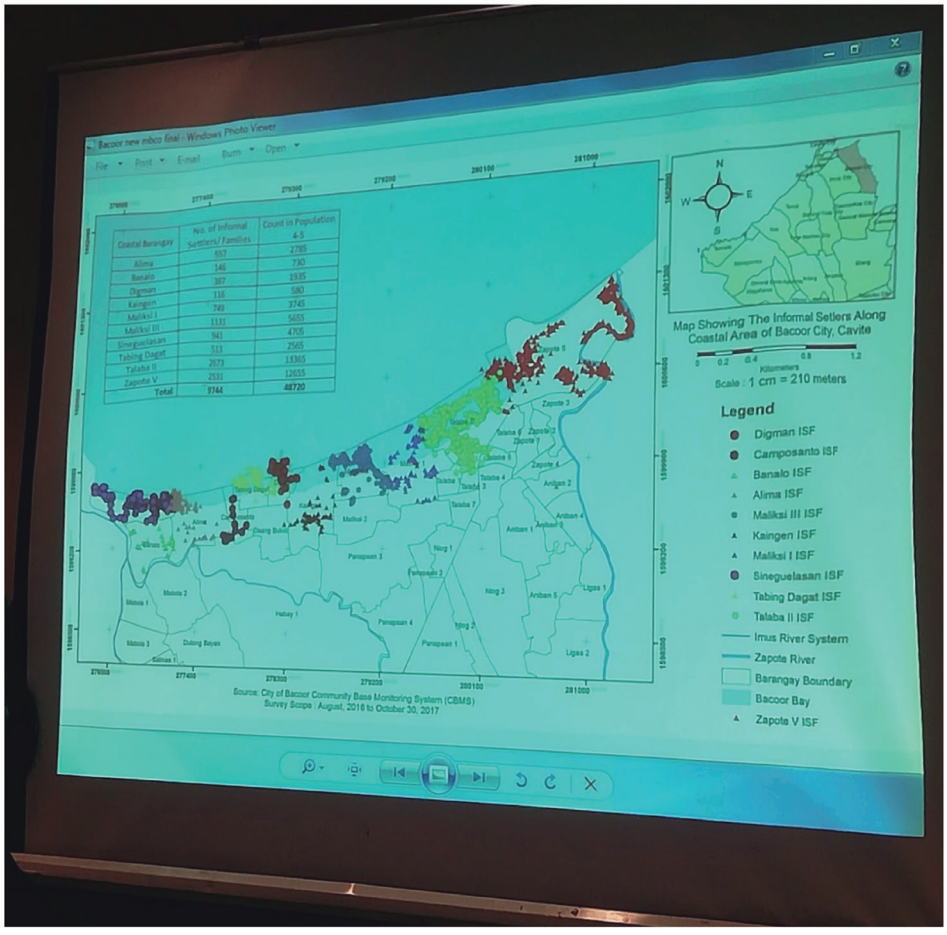

Figure 1. PowerPoint depicting ISF in Cavite as dots during the Manila Bay Coordinating Office (MBCO) meeting, December 11 2018.[8]

The MBSDMP team stressed the importance of inclusive planning and organized throughout the planning process offline and online consultation meetings, focus groups and field visits and provided information through the website (Deltares et al., 2021): all forms of top-down initiated invited participatory fora (Cohen & Uphoff, 1980). Nevertheless, questions about the MBSDMP's scope and objective were pre-set and thus restricted the agenda-setting possibilities of the focus groups.

8 This meeting was organized by the MBCO, relevant stakeholders and adjacent government institutions were invited to the Heritage Hotel and different stakeholders presented their work. Picture shows a map made by the City of Bacoor Community Base Monitoring System.

Moreover, the high-level planning scale itself posed difficulties to the organization of participation. Allocating sufficient time and resources is critical when planning for an area with 25+ million citizens. Since the MBSDMP team was lacking these resources, and facing critiques, the team-lead called for stakeholder representative groups to form aggregated umbrella organizations. In the Netherlands, the association for Dutch municipalities (VNG) is well-established and widely acknowledged. Yet, the Philippines has a different political context and a similar institution did not (yet) exist. The consultants called for more umbrella organizations so that various organizations would work together and speak with them in one voice, that would be more efficient. However, legitimate systems of nested political representation cannot hastily be developed, at least not within the timeframe of the MBSDMP.

In November 2018, during the fieldwork, the official MBSDMP partner organizations visit took place in the city of Navotas. Over twenty attendees came to speak with representatives of the municipality, community organizations and hear the concerns of the fishing community. NGO employees from the organizing Partners for Resilience group hoped that these eye-witness accounts would appeal to human moral sentiments, and decrease the distance between the inhabitants of Navotas, policy officers and consultants. And on an individual level, this meeting may have shifted the attitudes of some. Nevertheless, the MBSDMP premises made it difficult to integrate these eye-witness accounts into the planning process, partly due to the high-level planning scale of the MBSDMP.

Urban poor and small-scale fisherfolk, also from other cities, often express their concerns in local terms and refer to neighborhood specific issues. When discussing ways to integrate these concerns into the masterplan, consultants reported the fear that they did not want to create a 'bias' to certain localities; integrating local stories from Navotas may skew the plan in the direction of 'just a few areas' whereas the plan was supposed to address challenges in the larger Manila Bay watershed (Interview 12/06/2018). After this single afternoon visit ended, the pre-set planning objectives still required aggregated data about all four provinces and sixteen cities of Metro Manila, not just the story of a couple of fishing communities in Navotas. Time and resources were lacking to conduct in-depth research into the concerns of all stakeholders in a representative range of neighborhoods. As a consequence, the focus group discussions organized by the MBSDMP team were unable to counter the scalar out-zooming and distancing effects.

To fit the objectives of the MBSDMP, the challenges of Manila Bay first of all needed to be commensurated and translated into aggerated data. With these data, the team could draft an overarching zoning plan to steer the development of land reclamations

and habitat protection. The aggregated level of analysis and the difficulties with aggregating the position of certain stakeholder groups, obstructs the uptake of insights from these actor groups more than others. Even if a consultant wanted to integrate the perspective of ISF more, the pre-set choices for methods and the planning scale limited the possibilities for these concerns and justice claims to be translated into the MBSDMP outputs. The emphasis on models, mapping and visualization tools in the planning process appeals to the mindset of economists and engineers, but did not help to create space for alternative scale frames and associated justice claims.

Framing the planning process as 'participatory', in fact, has led to false legitimizations of its outcomes (see also Cooke & Kothari, 2011; Cornwall, 2008; Pugh, 2005). Of course, instrumentally, the information from top-down initiated focus groups helps to improve the design of master plans. Moreover, the transparency provided with the MBSDMP website and subsequent openness about the planning process did improve accountability. Nevertheless, the more intrinsic call from civil society organizations to re-distribute decision-making power and be able to add their own visions for the future of Manila Bay, was left unaddressed. As we have seen in section five, the chosen planning scale legitimized not to focus on guaranteeing high-level quality social housing, one root cause of the congestion of the city, but instead place the issue of social housing outside of the MBSDMP's aims. Groups that wanted to raise this issue during participatory fora, were less successful as the premises of the planning scale and problem statement provided little fertile ground for their uptake.

2.6.3 The Philippine planning context

As we argued before, planning tools need to be adjusted to the planning context to be able to seriously consider the plurality of justice claims. The recent Philippine president Duterte's government was characterized by a militaristic and authoritarian style of governance, which leaves little room for press freedom and public opposition. Alternative visions of development are repressed (Okyere et al., 2015), and advocates for social justice and the environment are criminalized (Hilterman, 2020; Nauta, 2018a). The Dutch government also receives criticism for how it organizes participation (Roth et al., 2017). Yet, civil rights and freedom of speech are better protected, subsequently, alternative justice claims can surface easier. This is a critical background condition to consider when assessing the suitability of the Dutch Delta Approach to be implemented in other coastal areas.

Another limit to take into account is that government planning efforts are often not the determining factor for the development of Manila Bay. Companies such as San Miguel corporation are powerful players and present NEDA with numerous unsolicited land reclamation proposals. Besides, advocates of Philippine and Dutch civil society

organizations criticize the Dutch government for on the one hand funding a 'sustainable' and 'inclusive' masterplan and on the other hand supporting Dutch land reclamation companies through economic diplomacy (Shannon & Dulce, 2022). Accordingly, the construction of the New Manila International Airport in the north of the bay, even goes against the MBSDMP coastal zoning framework that advised to protect the biodiversity in Bulacan and restore mangroves in this area that is also subject to subsidence and storms (OIDCI, Tractebel, et al., 2020a; Van der Veen, 2021). The construction of this new airport challenges the relevance and influence of the entire MBSDMP planning exercise.

Stories of planned societal transformation, territorial mega-intervention and multi-scalar masterplans, inserted in political-economic controversies trigger contestation and societal responses and are always contingent, mediated and open-ended (Long & Van der Ploeg, 1989). The chosen planning scale and associated scale frames and justice claims can have different outcomes in different places. To that respect, for future research, Colven's (2020) use of Tsing's concept of friction and 'the awkwardness of translation' to describe the Dutch master planning case in Jakarta, would be a useful lens to understand the multiple unintended consequences and spill-overs when Dutch master planning approaches are exported to other contexts. Future research could also more explicitly include recent developments in geographic scholarship such as abolition ecology (Heynen, 2016), climate coloniality (Sultana, 2022; Zeiderman, 2016b), and gendered patterns of uneven development (Heynen, 2018); as these are all relevant drivers behind the production of difference in cities. Acknowledging the influence of the historical, political and economic context of a planning process is needed to fully understand what is at stake for the people on the frontline of climate change. Critical scrutiny of discursive scale frames and their role to legitimize policy measures is important for all coastal cities drafting climate adaptation plans.

2.7 Conclusion

Scalar political analysis shows how the premises embedded in master plans (objectives, scope and associated planning scale) can shape political struggles about future developments: foregrounding or backgrounding particular groups' interests and their explicit or implicit justice claims. In this study, we demonstrate how the design choices behind the Manila Bay Sustainable Development Master Plan planning process constrained the uptake of certain kinds of justice claims due to multiple scalar political dynamics at work. Scalar politics matter for the integration of justice claims in water development planning in four ways: (i) scale both produces and is produced by the asymmetric economic relations and socio-ecological conditions that shape uneven development patterns, (ii) the structure of a justice claim itself is spatial and scale-sensitive, (iii) when a planning process functions as a forum for testing/resolving competing justice claims, the pre-set spatial boundaries of the plan can shape which claims are more easily integrated, and (iv) the context in which the contestation takes place contains lingering scale frames and justice claims that may spill-over to the planning process.

Planners, commissioners of masterplans and scholars studying planning processes need to be aware that assessments of (in)justice in environmental management are intrinsically scale-sensitive (Fraser, 2005; Harvey, 1996; Walker, 2009). Justice claims and controversies that align well with the planning scale are more easily integrated into the final plan. In the case of the Manila Bay Sustainable Development Master Plan, the contested relocation of informal settlement families was justified by scale frames pointing towards either the national economy, long-term disaster risk reduction or the environmental protection of Manila Bay. In this way, strategically or unconsciously, scale frames can (falsely) legitimize policy measures such as relocation. Simply calling for more or better participation does not resolve these issues when the implications of the pre-set planning scale and associated scalar politics are not addressed. Hence, not only the justice claims itself have a spatial structure, but the fora designed for the contestation between and testing of competing justice claims are also subject to scalar politics.

Our empirical application of Barnett's (2017) non-ideal and dialogical conception of justice shows that normative-analytical research into different conceptions of justice helps to unpack the Manila Bay controversy, can highlight the normativity of those perspectives that do not explicitly use the language of justice, and strengthens the argument to adjust (planning) methods. In this case, development planning needs to not only organize participation sessions where 'voices can be included', but also

make sure that comments from grassrooted groups become substantial factors and meaningful drivers in the 'projection of projects'; instead of being lost in aggregated outputs, while claims that are more easily aggregated are foregrounded due to the planning premises. Describing the debate about the MBSDMP, prioritarianism versus utilitarianism stood out as most salient competing conceptions of justice. Other salient factors to understand the controversy were naturalizing discourses such as the eco-scalar fix and legitimizing scale frames. However, multiple and distinct conceptions of justice exist that may be helpful to unpack and analyze other controversies in future research.

The strength of geographic research into justice is the focus on real-life controversies and manifest injustices, far from ideal theorizing about justice, while remaining alert to and making explicit normative-analytical distinctions and presuppositions. In this way, approaches can stay open-ended to ensure inclusivity, not restricted upfront to what researchers see as 'justice' (Barkan & Pulido, 2017), while being consciously involved as engaged and committed researchers. It thereby also opens windows to see how citizens may use justice claims in a way not theorized before.

The goal of this study was not to provide a full assessment of the Manila Bay Sustainable Development Planning process, nor of its participatory process. Rather, we focussed on the multiple entanglements between scalar politics and justice claims in water development planning. Attention to contextual analysis and interpretative methods is required to uncover if and in what way inequalities are reinforced through water development planning methods. Especially when methods are exported and employed in different contexts. All in all, this empirical research paper demonstrates the need to better integrate the scale-sensitivity of competing justice claims in water development planning.

If climate mitigation efforts fail, harsh policy measures may be called upon in the name of climate adaptation and sustainable development. Anticipating climate impacts, master plans with long-term adaptation solutions are already being designed for coastal regions all over the world. These plans should not add to the multiple ways in which people on the frontiers of climate change - and their justice claims - disappear from view.

Chapter 3

Continuous negotiation in climate adaptation: The challenge of co-evolution for the capability approach to justice

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3. Continuous negotiation in climate adaptation: The challenge of co-evolution for the capability approach to justice

3.1 Introduction

If the world fails to take sufficient climate action, large parts of the Earth can become uninhabitable (IPCC, 2021). Climate impacts vary over different geographic locations, and vulnerability to climate risks such as floods, droughts and heat waves intersects with all kinds of existing inequalities (Heyward, 2017; O'Brien et al., 2010; Paavola & Adger, 2006). Climate adaptation is defined by the Intergovernmental Panel on Climate Change (IPCC) as 'the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities' (IPCC, 2018). Assuming that protection is technically and economically feasible, political choices have to be made about what kind of landscapes and life forms to sustain in the future. For instance, when the sea level rises, a coastal society can choose to either protect land against flooding or alternatively engage in forms of managed retreat (Rulleau et al., 2017; Siders et al., 2021). Although the pace of climate change is unprecedented, large-scale land use transitions are not new. For example, many delta systems have been modified by engineering interventions to accommodate for growing human settlements. Lessons from past controversies about human-induced ecosystem state shifts can help to prepare for the local impacts of human-induced climate change.

The capability approach is promising to address questions of justice in climate adaptation, because it is open-ended, pluralistic, and sensitive to contextual differences (Doorn et al., 2018; Johnson, 2012; Kronlid, 2014; Schlosberg, 2012; Sheller & Leon, 2016). Translating the capability approach to environmental policy, Breena Holland argues that substantive ecological limits should be included. According to her, prioritizing the protection of 'Sustainable Ecological Capacity' as a meta-capability is necessary since healthy ecosystems are preconditions for all other human capabilities (Holland, 2008b, 2008a, 2012, 2014). This instrumental line of argumentation helps to justify ecological protection and climate action. The meta-capability Sustainable Ecological Capacity provides guidance to the debate about global climate justice and inequalities in consumption levels worldwide (Holland, 2008b). However, if policymakers want to specify ecological limits to address adaptation controversies at the local level, they run into problems.

The objective of this article is to show that establishing a priori ecological limits is insufficient to address controversies in co-evolving ecosystems. Drawing from empirical insights about ecosystem state politics, the article proposes a way to further

develop capabilities-based frameworks for adaptation justice (Dryzek & Pickering, 2018b). The in-depth case study analyzed is the opening of the Haringvliet dam in the Dutch Southwest Delta. The reason for using this case is that the controversy clearly illustrates difficulties with establishing static thresholds in co-evolving systems. The construction of the Haringvliet dam transformed the dynamic brackish estuary into a stagnant fresh-water lake. The paper describes the subsequent decades-long debate about an acceptable and desirable threshold for salt-water intrusion, which resulted in a peculiar compromise: the partial opening of the dam under strict conditions.

Previous and current struggles about shifts in socio-ecological system states, such as the Haringvliet controversy, provide an angle to better understand and anticipate future adaptation conflicts. Comparable controversies can revolve around changing the water table, re-distributing river flows, or setting new water quality and biodiversity targets. Due to the importance of context and situated knowledge, this article focuses on North-Western Europe and The Netherlands in particular. Nevertheless, future research may build upon theoretical insights that have a wider explanatory value. Connecting insights from empirical research and science and technology studies to the field of philosophy helps to empirically inform and further develop approaches in climate adaptation ethics.

The outline of this paper is as follows. In Section 2, key concepts used in the analysis are explained and embedded in the scientific literature. Section 3 describes the Haringvliet controversy and section 4 discusses the implications of the studied controversy for the capability approach. In sum, the paper explains how understanding the Dutch Southwest Delta as a co-evolving socio-ecological system challenges the notion of ecological limits in the capability approach. Additional pre-conditions for political equality are discussed to improve the relevance of the capability approach to local climate adaptation politics (Holland, 2017; Schlosberg, 2004; Srinivasan, 2007).

3.2 **Background:** Co-evolving socio-ecological systems and the capability approach

In this paper, climate adaptation is understood as a continuous process of negotiation that takes place in co-evolving socio-ecological systems. This section explains the details of this statement and positions the corresponding concepts in the literature (socio-ecological systems, co-evolution, adaptation politics, capabilities, and the meta-capability of Sustainable Ecological Capacity).

3.2.1 Socio-ecological systems

Climate adaptation takes place in existing socio-ecological systems (SES). These systems have already experienced quite some shifts and 'processes of adjustment' over time, either man-made or due to geomorphic processes. The concept of the socio-ecological system has an origin in ecology (Folke, 2007; Refulio-Coronado et al., 2021), but other academic perspectives have joined, including ecological economics (Gual & Norgaard, 2010), human geography (Cote & Nightingale, 2012; Minnes et al., 2020), sociology and science and technology studies (Marks et al., 2014; Wesselink et al., 2017). Adjacent concepts are co-production (Jasanoff, 2004), socio-hydrology (Melsen et al., 2018), hydro-social analysis (Wesselink et al., 2017), and hydro-social territories (Boelens et al., 2016). All point to the inherent entanglement of humans and nature (Latour, 2017). Acknowledging the mutual constitution of human, social and technical systems helps to understand system dynamics and avoid oversimplifications. In this paper, we use the term socio-ecological system to describe the messy co-constitutive development process of the Dutch Delta (Bijker, 2012; Disco & Van der Vleuten, 2002; Van der Vleuten & Disco, 2004; Zegwaard & Wester, 2014).

3.2.2 Co-evolution

The notion of co-evolution is used to describe the development of socio-ecological systems over time. Co-evolutionary perspectives highlight that climate adaptation is part of wider system dynamics (including the policy makers intervening and the researchers studying these systems). The ecological economist Richard Norgaard argues that natural and social systems co-evolve (Gual & Norgaard, 2010; Norgaard, 2006; Norgaard et al., 2009). In a process of co-evolution, different elements of a system are not only intertwined, but also respond to each other. As a consequence, not only the entities themselves but also the relations between elements are constantly changing (Norgaard, 2006, p. 24). For example, in the Dutch Delta, co-evolution is illustrated by changes over time in the water management regime. After World War II, the popular view among practitioners and scientists was that 'efficient' land management requires large and straight plots and mechanization.

Large-scale land consolidation followed and meandering creeks disappeared. As an unintended consequence, the system's water storage capacity decreased and became more vulnerable to droughts. Due to climate change, heat waves and droughts occur more frequently. Subsequently, citizens, policymakers and scientists rediscovered the value and lost functionality of these creeks. At that point, however, the Delta system had already changed significantly in shape. Changes in terms of cropping patterns, infrastructure development and investments contributed to new path-dependencies and technological lock-ins. Hydraulic infrastructures such as drainage systems and dams are part of the co-evolving delta system (Van Staveren & Tatenhove, 2016). History and path-dependency are important: delta systems are not only dynamic within one system state, but also shift to different socio-ecological system states over the course of time.

Co-evolutionary perspectives acknowledge the dynamism and slow processes of change that are inherently part of delta systems. This reflects the absurdity of trying to freeze or preserve a static imaginary of an ecosystem that never was static to begin with. For instance, European Union directives such as the Water Framework Directive and the Habitat Directive contain static policy goals that do no justice to the complexity of hydro-morphodynamic processes (Werf et al., 2020). Dryzek and Pickering draw the normative conclusion in *The Politics of the Anthropocene* that 'co-evolution may often be a more appropriate way of thinking than nature restoration or conservation' (Dryzek & Pickering, 2018b). A co-evolutionary analysis can also address the anthropocentric bias in public decision-making by drawing attention to the role of non-human and geomorphological forces (Marks et al., 2014, p. 882). The active role of 'nature' needs to be recognized in socio-ecological systems research (Dryzek & Pickering, 2018b, p. 10). Studying co-evolution means paying attention to the random and unexpected elements that can enter a complex and dynamic system at any time (idem, p. 24).

A critique of the co-evolutionary perspective is that concepts stemming from biology such as such as 'adaptation', 'resilience', 'evolution' and 'vulnerability' are multi-interpretable and can have a depoliticizing effect (Jeffrey & Mcintosh, 2006). There is a risk that ecological concepts mask normative choices about how to engage with humans and non-humans in ecosystem management (Cote & Nightingale, 2012; Driessen & Van Rijswick, 2011; Eriksen et al., 2015; Fainstein, 2015; Kaufmann et al., 2018), while politics form an integral part of how socio-ecological systems such as the Dutch delta develop and function (Bijker, 2002; Keessen et al., 2013; Van Eerd et al., 2017).

3.2.3 Adaptation politics

Due to climate change, existing policies and agreements about environmental thresholds may have to be re-negotiated. The IPCC definition of climate adaptation reflects the normative nature of climate adaptation and resilience policies (IPCC, 2018). Multiple positions are possible about what we find 'beneficial opportunities' and acceptable means to 'moderate harms'. This is relevant at the global level, since we are all dependent upon healthy atmospheric conditions, but also at the local level. For instance, the shape of coastal zones in the future depends upon the influence of sea-level rise, as well as on coastal societies that can choose between different management options (De La Vega-Leinert et al., 2018; Haasnoot et al., 2019; O'Brien, 2012). According to Eriksen *et al.* adaptation is 'a socio-political process that mediates how individuals and collectives deal with multiple and concurrent environmental and social changes' (Eriksen et al., 2015, p. 524). It is a political process, because there is disagreement about what to prioritize in public policy and what kind of life to protect. Furthermore, the notion of 'transformative adaptation' is frequently used in adaptation research to distinguish adaptation responses that tackle the root causes of human vulnerability (often linked to socio-economic inequalities) from adaptation responses that strengthen current inequalities or sustain the status quo (Eriksen et al., 2015; O'Brien, 2012; Pelling, 2011). Besides, there is not one final decision to be made about what kind of climate adaptation measures people prefer. Due to ongoing social and environmental changes, climate adaptation can be conceived of as continuous negotiation in co-evolving systems.

3.2.4 The capability approach

The capability approach is frequently mentioned as a fruitful approach to address questions of justice in climate adaptation (Doorn, 2018; Doorn et al., 2018; Dryzek & Pickering, 2018b; Fünfgeld & Schmid, 2020; Jepson et al., 2017; Schlosberg, 2012; Sheller & Leon, 2016; Walker, 2009b). Amartya Sen developed the concept of capabilities to critique the informational and normative bases of other approaches to justice in the liberal tradition, namely, utilitarianism (cost-benefit analysis), libertarianism, Rawlsian justice (primary goods) and aggregative neo-liberal economics (Doorn, 2019; Sen, 2009; Srinivasan, 2007, p. 459). The capability approach can help to improve consequentialist assessment of public policy and social outcomes (Sen, 2009). According to Sen, we should not only look at the distribution of resources and material goods, but also consider what people are actually able to do with the resources they have available and if they can turn these resources into real opportunities to realize ways of being and doing they value (this is mediated by so-called conversion factors). The alternative evaluative space created by the capability approach is favorable because of its ability to incorporate

contextual factors and differences between individuals. Capabilities need to be specified at the local level. This open-ended feature enables flexibility and room for democratic determination of valuable capabilities. Which capabilities to protect for the future is a key question for adaptation politics.

3.2.4.1 Capabilities and functionings

Capabilities 'are what people are able to do and be, and functionings are the corresponding [realized] achievements' (Robeyns, 2017, p. 38). The distinction between functionings and capabilities helps to discuss what kind of real opportunities, also conceived of as freedoms, humans have access to. The capability approach can show differences between the needs of individuals in climate adaptation and justify additional government support (Robeyns, 2017; Wolff & De-Shalit, 2007). Studying the context involves investigating so-called social and environmental conversion factors that influence whether people are able to transform capabilities into functionings.

Existing inequalities in a society can lead to 'corrosive' vulnerabilities when people are also faced with climatic stressors (Wolff & De-Shalit, 2007). For example, people who are already struggling with low income or high debts have fewer financial reserves to rely on during a crisis, let alone have the funds to anticipatorily invest in alternative livelihood options. The inclusion of such comprehensive contextual considerations makes the capability approach information intensive. Nevertheless, it does allow for capabilities-based adaptation frameworks to account for social class, race or gender differences. This avoids simplifications, such as addressing diverse farmers as one monolithic group.

3.2.4.2 Selecting capabilities

It should be noted that the concept of capability itself is value-neutral (Robeyns, 2017). A multitude of interpretations and versions of 'the capability approach' exist in combination with different normative frameworks for how to select and prioritize capabilities (Deneulin, 2011; Robeyns, 2017). Not all people agree on what the most valuable or important capabilities are. This is especially relevant if these capabilities can only be realized through collective (government) action. Additional choices and/or frameworks are required to identify which capabilities a government should guarantee and make decisions about trade-offs between capabilities (Robeyns, 2006, 2017). In this respect, Amartya Sen and Martha Nussbaum, the two developers of the capability approach, already have different ideas about how to arrive at a selection of basic capabilities.

Where Amartya Sen leaves the selection more open and relies on deliberation (public reason), Nussbaum has established a non-procedural list of central capabilities. In the capabilities literature, scholars following Sen rely on procedural justice and deliberative methods to select basic capabilities at the local level (Robeyns, 2017; Schlosberg et al., 2017; Sen, 2004, 2009). For Amartya Sen, freedom is the primary concern and he leaves the selection of capabilities to the people involved (Sen, 1999). The importance of including the people involved is also stressed by Schlosberg, who argues that recognition of different ways of being in the world is a key demand from environmental justice groups (Schlosberg, 2012). The open-ended capability approach can accommodate this diversity. However, the reliance of Sen's capability approach on procedural justice is criticized for providing too little substantive protections of justice.

Martha Nussbaum, on the contrary, relies on independent moral argument and developed a list of ten basic capabilities that require a-priori guarantees. Nussbaum's list of basic capabilities contains: (1) life, (2) bodily health, (3) bodily integrity, (4) senses, imagination and thought, (5) emotions, (6) practical reason (7) affiliation, (8) other species, (9) play, (10) control over ones' environment (Nussbaum, 2011). The list was developed in close collaboration with people from all over the world (Holland, 2008b; Nussbaum, 2011). The list is intentionally vague and open-ended to be able to attend to cultural differences and allow for local specification (Deneulin, 2013, 2011). Still, Nussbaum's list is criticized for lacking (democratic) legitimacy and being based on Western liberal-centric assumptions (Srinivasan, 2007). In search of non-procedural a-priori environmental protections, Breena Holland built upon Nussbaum's list and developed the meta-capability of Sustainable Ecological Capacity as a criterion to incorporate environmental protection in Nussbaum's capabilities approach (Holland, 2008b).

3.2.4.3 The meta-capability Sustainable Ecological Capacity

The capability approach receives criticism for its anthropocentric foundation. The focus is on human flourishing and the environment is only discussed as part of the context that influences the translation process of human capabilities to functionings (i.e., as conversion factors) (Robeyns, 2017, p. 189). To solve this problem, Schlosberg (2012) and Dryzek and Pickering (2018b) extend the capability approach by also granting capabilities to communities, species and ecosystems. Yet, Robeyns (2017) objects to these extensions of the capability approach that they are not aligned with its theoretical foundations that are at the core about human agency and functioning. A counter-objection to using anthropocentric interpretations of the capability approach, however, would be that they do no justice to the intrinsic value of ecosystems, nor to the increased awareness of the mutual entanglement between humans and nature. Drawing from earlier insights about co-evolution, the environment and non-human actors are not to be understood as static

décor pieces to human justice affairs (Dryzek & Pickering, 2018b). Research into ecocentric (capabilities) approaches to justice are important and developing (Byskov, 2017; Hickey & Robeyns, 2020; Melin, 2021). For the purpose of this paper, however, it is sufficient to build upon anthropocentric and instrumental argumentations, such as Holland's (2012) plea to understand the environment as a meta-capability in order to protect human capabilities worldwide.

Nature protection can be defended by pointing to the indispensable importance of ecosystem functioning for human flourishing. Holland aims to integrate substantive a priori ecological protections of ecosystem functioning in Nussbaum's capabilities approach: the meta-capability of Sustainable Ecological Capacity. The environment's ecological functioning is a meta-capability because it is a precondition of all the basic capabilities on Nussbaum's list (Holland, 2008a, 2008b, 2012). According to Robeyns (2017), the conceptualization of 'meta-capability' is off because the environment and ecosystem services are not capabilities themselves (i.e. real opportunities for human beings). Alternatively, the environment should have been conceptualized as a non-substitutable absolutely necessary pre-condition for human well-being in terms of capabilities (Robeyns, 2017, p. 171). Nevertheless, whether conceived of as a 'meta-capability' or as a 'non-substitutable pre-condition', the point remains the same that ecological protections need to be added to the capability approach to protect human capabilities. The strength of this line of reasoning is that it foregrounds the existential dependence of human agency and functioning on their environment. In *Allocating The Earth*, Holland (2014) provides substantive argumentation for identifying ecological limits and subsequently capability ceilings to safeguard the meta-capability 'Sustainable Ecological Capacity' and thus human capabilities worldwide.

According to Holland, the threshold level of the meta-capability Sustainable Ecological Capacity should be defined in reference to real ecological system thresholds. The collapse of ecosystems ultimately endangers all basic human capabilities. For instance, the capability of nutrition and shelter rely on healthy ecosystems and a stable climate system (Holland, 2014). These ecosystem thresholds should be avoided surpassing because of their crucial role in the support of basic human capabilities (idem, p. 162):

> "Policies that promise to stay within the ecological limits of justice will, at a minimum, establish capability ceilings that protect the resilience of ecosystems they influence. [...] To develop a more scientifically demanding and nuanced form of policy evaluation would entail establishing capability ceilings in more direct relation to ecological thresholds so as to ensure the capability protections a policy provides will prevent the activities that push an ecosystem beyond the point at which a collapse in its functioning occurs." (Holland, 2014, p. 163).

A key difficulty when translating this principle to the realm of local climate adaptation, however, is to establish ecological protections or preconditions 'in reference to real ecological system thresholds'. Holland writes that this can be done science-based. However, the term resilience is not just 'science-based', it is a normative concept (Cañizares Gaztelu, 2023; Dewulf et al., 2019; Keessen et al., 2013). In the original ecological terminology, 'resilience' means bouncing back to the original eco-system state and the ability of an ecological system to recover from shocks (Cañizares et al., 2021; Folke, 2006). Yet, at the local level, multiple ecological system states are possible. The value-laden question is: to which system state should the socio-ecological system return? Which system-state should become 'resilient'?

Different human actors benefit from different socio-ecological system states. Crossing socio-ecological system thresholds can alter the ecosystem services provided, which will affect different actors differently. Flipping a socio-ecological system to a different state does not necessarily have to imply full 'collapse' in the sense that zero human capabilities can be provided by that ecosystem after that point. Nevertheless, the overall quality of people's lives may be affected and usually this happens along the lines of existing inequalities. Some ecosystem services can be argued to be valuable to all humans, such as livable temperature levels and sufficient rain for food production. Still, socio-economic inequalities cause differentiated vulnerabilities. Some people can afford air-conditioning, irrigation systems or high-quality food imports, while others do not have access to these opportunities.

The quality of eco-systems often gradually declines over time. The question which type of socio-ecological system to protect at what quality level can be fiercely contested at the local level, since this may imply that certain activities that accrue benefits to specific actors are no longer possible (i.e. the capability ceilings Holland (2014) calls for in *Allocating the Earth*).[1] Ecological systems are nested, consisting of multiple interconnected systems. At the local level, socio-ecological system state A may 'collapse'

1 For example: when an area prone to desertification (SES-state A) loses all fertile soil and turns into a complete desert (SES-state B), it is still possible to 'live' in this area, though the capabilities available to local inhabitants fiercely decline. Ecosystem restoration in deserts and efforts to reforest and add new topsoil are possible, but the political issue is that not all actors depend equally on a specific ecological system state and on ecosystem restoration towards a specific state. Moreover, the most disadvantaged communities in this stylized desertification example, may on the one hand be most dependent on the ecosystem services provided by healthy soils (SES-state A), but at the same time also be most pressured by short-term economic concerns to continue practices that contribute to desertification such as over-grazing or deforestation (causing the shift towards SES-state B).

or shift towards state B, but this does not necessarily mean that basic human capabilities can no longer be provided. Global eco-system collapse may not immediately be at stake because of the shift at a different level. Moreover, ecosystem restoration efforts could potentially still enable an ecosystem to return to the previous ecosystem-state A. Still, eco-system state A may overall be better for biodiversity and for staying within global ecological limits on the long term than eco-system state B.

The point is that different 'resilient' socio-ecological system states can harbor different kind of functions, and thus deciding which practices and eco-system state to protect 'in reference to real ecological system thresholds' is not an a-political choice that can solely be 'based on the science of ecology'. This is a value-laden decision that requires normative justification. The statement that we should avoid the collapse of 'an ecosystem' beyond its thresholds provides too little guidance for climate adaptation ethics.

The capability approach to justice should be able to integrate ecological protections beyond the absolute minimum (i.e. complete and utter collapse or 'perpetual decline' of global ecosystems). Yet, integrating such ecological protections raises additional questions: where to draw the line? And who gets to draw these lines and decide what the most desirable socio-ecological system states are to return towards or sustain? Holland (2014) does notice the distributive effects of ecosystem changes and the corresponding necessity to include procedural justice concerns. In climate adaptation ethics, including procedural justice concerns is critical because identifying 'real ecological system thresholds' by itself does not help to resolve fierce negotiations about competing desired ecosystem-states that are part of adaptation controversies at the local level.

In the rest of this paper, the Haringvliet dam-opening controversy is discussed to explain that the choice for either a resilient fresh or a resilient brackish ecosystem is foremost a political and normative decision. Adaptation responses can support 'resilience' as in bouncing back to the same socio-ecological system, or support transformative responses that do not recreate the current system (Dewulf et al., 2019). Moreover, at the water system level, uncertainties about impacts of responses and future climate scenarios cause difficulties for establishing precise ecological thresholds as reference points in adaptation policy. Instead of focusing on terms such as 'resilience' and ecological-system thresholds as criteria to resolve such dilemmas, it may be more fruitful to focus on transformative adaptation and securing political equality in the ethics of climate adaptation.

3.3 Case: The contested restoration of estuarial dynamics in the Haringvliet

This section explains the research design (section 3.1) and introduces the Haringvliet controversy (section 3.2). Next, it addresses disagreements about the most desirable ecosystem state (section 3.3), decades-long negotiations about the precise chloride level threshold in the Haringvliet (section 3.4) and the co-evolutionary changes that unsettle temporary compromises (section 3.5). Examples of the latter are changes in public opinion, changing investment and land use patterns and unexpected changes in the natural system due to engineering interventions and anthropogenic climate change.

3.3.1 Research design and methodology

This philosophical study is informed by qualitative interpretative research (Wesselink et al., 2013). As earlier studies in science and technology studies have shown, detailed empirical descriptions can generate knowledge about how societies handle water management dilemmas and inform policymaking (Bijker, 2002; Jasanoff et al., 1995; Van der Vleuten & Disco, 2004; Zegwaard & Wester, 2014). Philosophical research and especially ethics can benefit from empirical insights to gain a more fine-grained understanding of real-world controversies, select the most salient approaches and even further develop philosophical theories (Dewey, 1927; Doorn, 2019; Holland, 2017; James, 1909).

The case study is based on interviews, observations and secondary literature. The author followed policy processes about the future of the Dutch Southwest Delta (most notably, meetings of the Gebiedsagenda Zuidwestelijke Delta 2050), spoke to fourteen expert-informants and stakeholders and studied policy documents. Interviews were conducted according to the principles of prior and informed consent. Interview notes were documented, audio recordings transcribed and data stored, protected and anonymized. The combination of in-depth interviews, ethnographic observations and multiple field visits to the Haringvliet's surrounding farmland and nature reserves informed the conceptual philosophical analysis and steered the research direction in an iterative manner. Conclusions are of an interpretative nature and do not aim to provide final conclusions about the controversy. Rather, the goal is to gain insights by describing the Haringvliet controversy, the issues around establishing ecological limits and the difficulties with using these limits to justify philosophical limits or policy targets. In this way, the research also shows the relevance of combining philosophical research with empirical social scientific data.

3.3.2 The Haringvliet estuary turned fresh water lake

Since humans started to inhabit the low-lying peat marshes of The Netherlands, the Dutch Delta has become one of the most heavily modified deltas in the world (Disco & Van der Vleuten, 2002; Zegwaard & Wester, 2014). One of the major waterbodies part of the Dutch delta is the Haringvliet, a 10,382 ha fresh-water lake that used to be a brackish estuary (Ysebaert et al., 2016). All the rainwater that falls in the Rhine-Meuse watershed eventually flows to the North Sea. Details of the water management regime: The discharge volume of the Haringvliet sluices depends primarily on the river discharge of the Rhine at Lobith, near the German border. Between 2000 and 2011, it was measured that 24.2–30.4% of the Rhine discharge discharged into the sea via the Haringvliet sluices (Buitink et al., 2021). The average discharge of the Rhine river is 1960 m3/2 and the catchment area is around 170,000 km2. The average discharge of the Meuse river is significantly smaller, 230 m3/s, and the catchment area is around 33.000 km2 (Buitink et al., 2021; Ysebaert et al., 2016).

After a major coastal flood in 1953 that led to over 1800 deaths, a series of dams and storm barriers called the Delta Works were constructed (figure 2). The plan to close off the sea-arms of the Delta had three objectives: increasing the fresh water availability, improving the connectivity between the separate islands of Zeeland and Zuid Holland and ensuring flood safety (Marks et al., 2014). The tidal dynamics of the once-open sea-arm disappeared with the construction of the Haringvliet dam (1958–1971; several kilometers of dam, 17 sluices and a ship lock) (Ferguson & Wolff, 1983). Sectors that reaped the benefits of these changes were fresh water agriculture, transportation companies and the Port of Rotterdam. Moreover, citizens were better protected against flooding and profited from economic development in the region. Stakeholders on the losing end of this landscape modification were the fish and shellfish sector, nature protection organizations and the ecology of the brackish delta itself (Ruessink, 2019). In the Haringvliet, a brackish wetland was lost, and with it, rare species and a unique landscape (Dieperink, 1998). The water changed from a brackish/saline to a predominantly fresh water system.

The Haringvliet is a crucial component of the larger Rhine river systems' ecology. Water quality measures have helped to strengthen the fish populations (Ruessink, 2019). Still, due to all the modifications in the river system, the Rhine is put on a lifeline and current fish stocks are not sustainable for the future (Dieperink, 1998; Ruessink, 2019; Van Slobbe et al., 2016). Migratory species such as salmon face barriers on their migration routes. The opening of the Haringvliet sluices during the migrating season could help fish such as salmon to reach their breeding grounds in Germany and Switzerland. Moreover, an ecological transition zone with a gradual shift from saline to fresh water supports migrating species that need 'softer borders'.

The creation of brackish transition zones or the more ambitious reintroduction of tidal dynamics is contested. Since the closing of the estuary, fresh water agriculture intensified, and farmers shifted to more capital-intensive and sensitive crops. These changes heightened their dependence upon the abundant fresh water availability. The fresh-water usage of other sectors such as drinking water for the growing population and industry have also increased over time. In short, the newly created freshwater reservoir is used by old and new stakeholders that have come to rely on and feel entitled to a fresh Haringvliet.

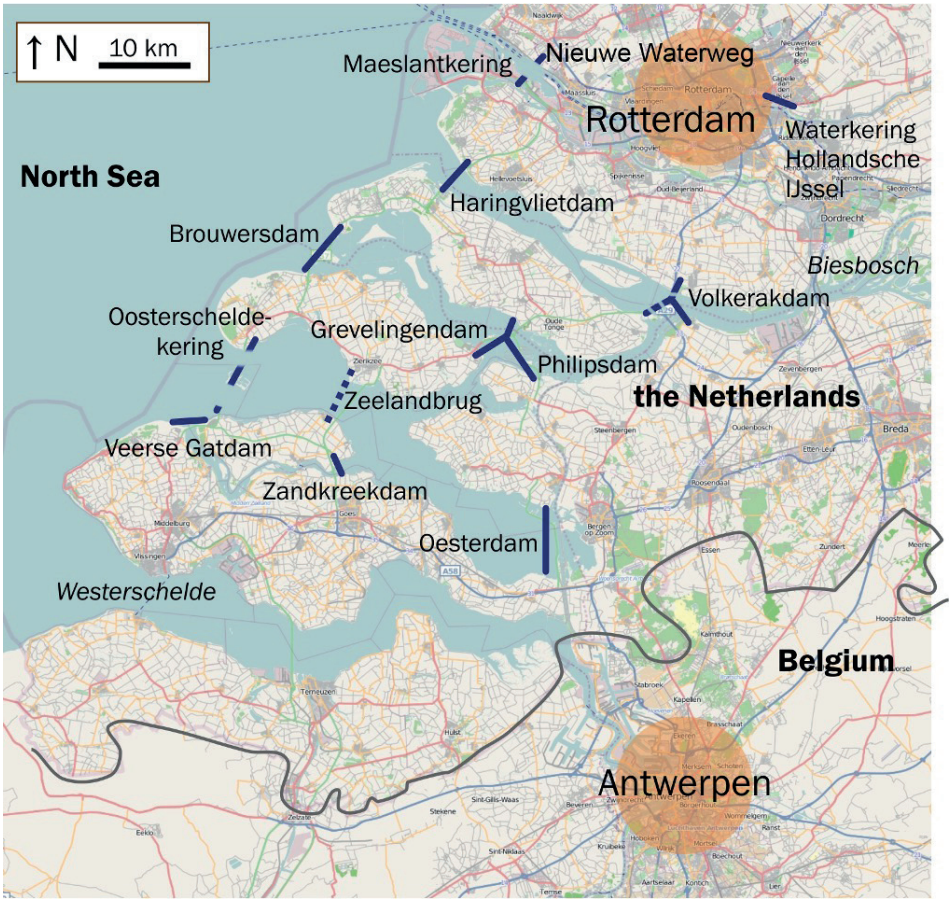

Figure 2. Overview of Dutch Delta Works. Adapted CC BY-SA map originally by OpenStreetMap

3.3.3 Fresh or saline: What is the most desirable socio-ecological system state?

What is seen as the most desirable socio-ecological system state varies per stakeholder and over time (Marks et al., 2014). Debates about the saline intrusion are related to policy shifts in Dutch water management and changes in the general public opinion

towards the environment—showing the relevance of co-evolutionary analysis. After the 1953 disaster, flood safety became the primary and almost uncontested objective behind the expensive delta works that were constructed between 1958 and 1987 (Bijker, 2002; Disco & Van der Vleuten, 2002). The biodiversity losses and negative impact on the fish and shellfish sector were known, but they were both underestimated and considered negligible in comparison to the trauma of the disaster of 1953 (Ferguson & Wolff, 1983). The long construction phase of all the Delta Works coincided with a rise in environmental awareness in Dutch water management (Bijker, 2002; Cioc, 2002; Disco, 2002). In the 1970s, the detrimental ecological effects of the closing of the Haringvliet became visible. Fishermen and environmental groups protested together against the planned closure of another sea-arm: the Eastern Scheldt. The protests were successful and the design was adapted from a permanently closed dam to a flexible storm-barrier, which meant that the tidal dynamics could stay (Bijker, 2002). This 'ecological turn' in the design of the Eastern Scheldt barrier is often mentioned in the literature as an example of value change and new integration of ecology into civil engineering (Bijker, 2002; Cioc, 2002; Disco, 2002). However, this is not the only shift that can be observed in the Dutch Southwest Delta.

The rise of environmentalism kept ascending roughly between 1960 and 2000. Ambitious environmental policy was developed in the form of the RIO declaration and the European Water Framework Directive. In 1986, *Plan Ooijevaar* was presented with a vision for restoration of the Dutch river systems. During this time, there was societal support for Rijkswaterstaat to commence investigating the restoration of tidal dynamics in the Haringvliet. Nevertheless, re-introducing tidal dynamics in the Haringvliet was fiercely debated and an alternative plan emerged: *Getemd Getij* (English translation: 'tamed tides'). This plan involved creating a saline gradient transition zone to accommodate the migration of fish (Marks et al., 2014, p. 889). After fierce political discussions about the 1994 Environmental Impact Analysis, the final 2000 policy decision was adopted called *Het Kierbesluit* (English translation: the decision to create a 'crack' in the sluices of the Haringvliet dam). By now, the plan only included the partial restoration of tidal dynamics in the Haringvliet (Wiering & Arts, 2006).

The plans to restore tidal dynamics encountered resistance, because the social system had also adapted to the new situation with a closed Haringvliet (figure 2). Fresh water agriculture had intensified and was now more dependent upon the Haringvliet as a freshwater reservoir. Other factors that fueled the controversy were spill-over effects due to low food prices, new 'delta nature' projects that involved buy-outs of farmland and the drought of 2003. Climate change and the risk of decreasing freshwater availability entered the policy agenda more prominently (Marks et al., 2014, p. 892).

Due to negotiations about compensation measures and construction delays, the implementation of the 2000 government decision *Het Kierbesluit* was postponed several times. Between 2008 and 2010, after an intensive lobby by farmer organizations and the election of a new government, the project to restore the Haringvliet almost came to a halt altogether (Keessen et al., 2013).

Only after international pressure from the International Commission for the Protection of the Rhine and the European Union, it was decided to continue with the implementation of the 2000 Kierbesluit (Rijksoverheid, 2000; Van Eerd et al., 2017). The opening of the Haringvliet dam is a vital part of the chain of ecological measures with the aim to restore the Rhine and bring back the salmon. Other countries had already invested funds in ecological measures that would be less effective if The Netherlands did not do its turn. After 2010, the rationale behind the partial dam opening appealed more to values such as diplomatic trustworthiness and solidarity in the transboundary river system, than to the former devoted aspiration to restore the Haringvliet. The current version of *Het Kierbesluit* contains more humble ecological ambitions that are no longer mentioned as the 'first step' towards the full restoration of tidal dynamics as was part of the first plans, but functions as a stand-alone measure to improve living conditions for migratory species.

In sum, over the course of time, two distinct shifts occurred in the management of the Haringvliet. The first was part of the broader ecological turn in Dutch water management that was reflected in policy plans about restoring tidal dynamics. The second shift occurred after the 2000s when there was a growing awareness of potential future limits of fresh-water availability and a re-prioritization of economic interests over ecological interests. The people involved in the project experienced first-hand the importance of fluctuating public opinion and policy priorities over time. There were thirty-three years between the initial plan making for restoration of tidal dynamics. The first time that the Haringvliet sluices were actually opened for a short while was in 2019.

3.3.4 Contested threshold: Saline intrusion in the Haringvliet

The outcome of this long negotiation process is that the sluices of the Haringvliet can open under the condition that (1) the Rhine's discharge level is above 1200m3/s or 1500 m3/s, depending on the tides; (2) the salt water does not pass the town of Middelharnis on the map; (3) chloride levels at the drinking water inlets do not exceed 300 mg/L. The sluices can only open when there is sufficient discharge to flush the Haringvliet with fresh water to prevent salt-water intrusion beyond the dictated line on the map. In previous plans, the line was drawn further inland beyond the Tiengemeten island,

but in those scenarios, another drinking-water inlet had to be relocated, significantly increasing the costs. The large economic costs of opening the sluices were related to compensatory measures that needed to be implemented to secure fresh water for drinking water, industry and agricultural irrigation.

Figure 3. Haringvlietdam from the sky. Source: Rijkswaterstaat Beeldbank. Image reproduced with permission of Rijkswaterstaat.

Since 2019, after several implementation delays due to regional protests, the managing agency, *Rijkswaterstaat*, implementing agency of the Dutch Ministry of Infrastructure and Water Management, is experimenting with small openings and monitoring the effect on the salt-water intrusion (Van Meerkerk et al., 2013; Warner, 2016). The agency uses adaptive water management techniques with a focus on experimenting and learning, but has to stay within the agreed upon chloride ranges at all costs. If there would be an accidental 'saline bell' that floats further than the agreed upon line, or worse, influences a fresh-water inlet, the agency may lose the hard-won trust of local actors that were against *Het Kierbesluit* in the first place. Therefore, Rijkswaterstaat operates very carefully.

The Haringvliet controversy shows that different actors favor different socio-ecological system states over time: fresh versus brackish water. Moreover, within the current freshwater system, the exact ecological thresholds such as river discharge and chloride levels are meticulously debated. Although neighbouring farmers are quite content with

the current management regime, many still conceive of the partial dam-opening as a luxurious and costly measure with uncertain benefits. Environmental groups, on the other hand, are not satisfied with the small opening and criticize the lack of ambition from *Rijkswaterstaat* to further improve tidal dynamics. Although beneficial effects of the opening of the sluices on fish stock and fish migration are carefully celebrated, they are uncertain and currently being monitored by *Rijkswaterstaat* and universities. All in all, the *Kierbesluit* policy decision is the outcome of a long negotiation process and a peculiar and unstable compromise.

Figure 4. (1) The Haringvliet Dam. (2) In red, the negotiated saline threshold in the Haringvliet near the town of Middelharnis. (3) Spui waterway, risk of backward salt-water intrusion. Black parts represent fresh water, white/dotted parts saline water. *CC BY- SA adapted map from Wikimedia Commons; original commissioner: House of Representatives, The Netherlands.*

3.3.5 Continuous change: The co-evolution of the Dutch Delta

The closing of the Haringvliet is difficult to reverse completely because the dam's construction influenced the co-evolutionary process of the Dutch Southwest Delta. Two examples of such changes will be discussed next: changes in land use and investment patterns and changes due to unintended consequences of engineering artefacts and human-induced climate change.

3.3.5.1 Path dependency: Investment and land use patterns

Since the Haringvliet dam closed, investment decisions have been based upon the artificially created high-quality freshwater reservoir. After the food shortages during World War II, the Dutch government strived towards self-sufficiency and increased food production (Grin, 2012, pp. 5–10). Private investments and scale enlargement were supported by government policy oriented at maximizing agricultural output. Increased mechanization, land consolidation and up-scaling all led to the current situation in which The Netherlands is a large net-food exporter (Grin, 2012; Van den Bergh, 2004). Many farms transformed into large agricultural companies with the associated debt and dependency on banks. Farmers are invested in the fresh water system, also literally: the restructuring of the island of Goerree-Overflakkee and the improved drainage system is still being paid in instalments by farmers in the region.

Acknowledging the influence of past policies on the current situation is critical to understand different justice claims in the Haringvliet controversy. A conclusion from a co-evolutionary analysis could be that future public and private investments need to avoid strengthening harmful institutional and technological lock-ins. Climate-proof production and healthy soils are also important to farmers; still, interviewees said they were only experimenting on small plots. There are barriers in the wider social system: upscaling these 'natural' techniques to all their hectares would only be possible if food prices increase throughout the entire internal market in Europe. A farmer: "*It is no longer possible to live from only five hectares, you need a field of fifty hectares now. The conditions for our business case have changed.*"

3.3.5.2 Shifting systems: Impacts of engineering artefacts and climate change

The Dutch Delta system is not static and requires constant human maintenance in the form of drainage and flushing in order to stay fresh. Unintended consequences of the Haringvliet dam's closure were changes in sedimentation and erosion patterns. The higher stream velocity deepens the Spui waterway that connects the Haringvliet to another sea arm: the Nieuwe Waterweg (figure 3). Consequently, the risk of 'backward' salt-water intrusion increased. The Nieuwe Waterweg sea arm is not closed by a permanent dam because it is home to the Port of Rotterdam. The largest harbour of Europe is a powerful stakeholder that requires deep shipping routes free from obstacles. Salt water is heavier than fresh water and travels further inland through the deep waterways. In Dutch, this phenomenon is called the 'salty tongue'. The impact on the Haringvliet is that even when the Haringvliet dam is fully closed, in certain weather conditions, the salty water may still enter the Haringvliet through the Spui back entrance. A co-evolutionary perspective can include unexpected shifts in the natural system, such as erosion, that change the

overall system dynamics. Moreover, the socio-ecological system of the Dutch Delta is part of the larger hydrological and climate system. If climate change continues, all the discussions about the Haringvliet dam opening may become superfluous.

Due to climate change, in the long term, the discharge pattern of the Rhine river is expected to become more variable, with higher and lower extremes (Haasnoot, Kwadijk, et al., 2020; Klijn et al., 2015; KNMI, 2021; Rottler et al., 2021; Van Meerkerk et al., 2013). In the Rhine watershed, researchers already measured a change between 1981 and 2010: precipitation decreased with 80 mm and evaporation increased with 70 mm (Klijn et al., 2015). The Royal Dutch Meteorological Institute (KNMI) translates the IPCC scenarios to the Dutch context with the KNMI'14 scenarios. In all KNMI'14 scenarios, the chance of discharges above 12.000 m3/s increases from once every 100 years to once every 30 years (Rottler et al., 2021). In the more extreme scenarios, beyond 2085, this can even be once every ten years (ibid). Lower discharges are currently only projected to occur in the high-end scenarios. The reason is that the increased melt water from the alps temporarily levels out the decreased precipitation in the summer. On the long term, however, if climate change accelerates, extremely low discharges are expected to occur more frequently. In 2023, the KNMI'23 scenarios will be adjusted to the sixth IPCC assessment report published in 2021(Klijn et al., 2015).

Low river discharges can contribute to salt-water intrusion in the Dutch Delta. The threshold for the *Kierbesluit* measure is set at 1500 m3/s discharge with high tide, because this is the amount required to prevent the salt water to intrude too far into the waterways - according to the negotiated standards. If there is less water available for flushing the Haringvliet and the Nieuwe Waterweg, there will be fewer days that the Haringvliet sluices can be opened under the conditions of *Het Kierbesluit*. This reduces the effectivity of the Haringvliet *Kierbesluit* measure in its current form (Ruessink, 2019). Besides, translating recent findings about the risk of accelerated melting of the Antarctic ice sheet, researchers find that salt-water intrusion may also intensify because of sea level rise. In combination with increased fresh water demand, this reduces the fresh water availability (Haasnoot et al., 2019; Smits et al., 2006). Moreover, with higher sea levels, the Delta works storm surge barriers will need to close more frequently until at one point, all must close permanently (Smits et al., 2006).

These changes in local ecosystems and the global climate system result in continuous balancing acts instead of a stable equilibrium. In the future, large amounts of public and private resources may be required to sustain current functions in the region. As climate impacts materialize, the balance between what is possible in the Dutch Delta and what kind of land usages the Dutch taxpayers are willing to sustain may change.

The risk of more frequent droughts strengthens the wish of fresh water farmers to maximize fresh water availability in the region. Therefore, they contest efforts to salinize or create brackish transition zones. Yet, more questions can be raised: not all crops are as water intensive and sensitive to saline water as tulip flower bulbs, a typical high-value cash crop in the region. An interviewee stated rhetorically: "*Where is it written that they [farmers] have the right to grow tulips?".* Whether adaptation responses should focus on increasing fresh water storage or support accommodating tidal dynamics and associated saline livelihoods is topic of fierce debate.

Besides salt water intrusion, the risk of accelerated sea level rise puts the question of long-term habitability of the coastal low-lying marshes on the table (Alphen et al., 2022; Haasnoot et al., 2020). The maintenance of all current engineering artefacts is very costly. Moreover, these barriers also obstruct the full restoration of the Rhine river system (Haasnoot, Kwadijk, et al., 2020; Ruessink, 2019). Scenarios and imaginaries vary between hold-the-line policies, land reclamations and advancing to sea or resorting to managed retreat/managed realignment options (Haasnoot et al., 2019). Difficult trade-offs will have to be made to establish thresholds and balance values such as ecology, economy and safety.

In sum, future stressors due to (un)foreseen social or natural developments will alter the precarious balance between different actors in the Haringvliet. Hence, the *Kierbesluit*-compromise, the result of decades-long negotiations, will probably only be a temporary compromise.

3.4 Discussion

According to the IPCC definition, climate adaptation involves anticipatory action to 'moderate harms' and reap 'beneficial effects' of changes in social and natural systems. The more frequent occurrence of droughts and a rising sea level will put pressure on today's negotiated compromises, such as the Haringvliet chloride level compromise. In the future, next to climate impacts, more controversies about socio-ecological system state shifts can be anticipated. The landscapes in which we live keep changing, so establishing ecological thresholds means taking part in continuous negotiations. These adaptation politics are shaped by social and ecological path dependencies. Next in the discussion, the implications of the challenge of co-evolution for the capability approach to justice are explained.

3.4.1 Implications for the capability approach

The analysis of the Dutch Delta as a co-evolving socio-ecological system has implications for the capability approach to justice. For example, the Haringvliet controversy shows that which species or kind of 'nature' to protect is debatable. Fresh or brackish ecosystems support different species and different kinds of human livelihoods. The artificially created Haringvliet fresh water lake contains more species, while the former Haringvliet estuary was home to rarer species that flourished in brackish water. The Haringvliet dam also obstructs the flourishing of migratory species (and associated livelihoods, such as salmon fishing, which almost disappeared in the Rhine river (Cioc, 2002)). Looking at the controversy from the level of European environmental governance, it can be justified that the brackish water and migratory species earn protection. Not only for the salmon, but because healthy rivers are the backbone of human civilization. Clean, safe and biodiverse Rhine water will also contribute to the overall development of the region, just as infrastructures for navigation do. Nevertheless, local landowners may reach a different conclusion. The agricultural sector has come to rely on the Haringvliet as a fresh water reservoir. They fear the shrinking availability of fresh water in the future due to climate change and increases in demand. In short, it is debatable whether the notion of 'Sustainable Ecological Capacity' requires thriving salmon stocks or the protection of the existing fresh water system that is the Haringvliet.

Adaptation responses in the Dutch Southwest delta can either support the existing fresh water system ecology or the transformation towards more saline ecosystems and livelihoods. In terms of the capability approach, this means that different socio-ecological system states allow for the development of different functionings and capabilities. Abstract basic capabilities such as 'life' and 'bodily health' can be protected in multiple scenarios, although having the freedom to decide what kind of livelihood

one wants to realize (functionings) is necessarily constrained by developments in the larger socio-ecological system. Ecological limits change over time and can be the topic of fierce political debates; as the Haringvliet controversy illustrated. Moreover, what may seem like marginal 'technical' policy discussions about dyke width or changes in the chloride level actually present normative choices (Keessen et al., 2013, 2016); in local climate adaptation, the devil can be in the details.

The challenge of co-evolution also entails acknowledging the influence of changes in adjacent techno-social systems upon the development of the Haringvliet controversy. First, public opinion and policy priorities in the water management regime changed during the thirty-year negotiation process about opening the sluices. Second, path-dependencies created by past investments, engineering artefacts and policies supporting one type of agriculture shaped the current state of the Haringvliet and its vulnerability to climate risks. At last, unintended consequences such as local erosion or global climate change will keep uprooting today's contested compromise about salt-water intrusion: *Het Kierbesluit*.

To conclude, the Haringvliet controversy shows that it is not possible to rely on 'straightforward' ecological thresholds for establishing ecological protections in climate adaptation at the local level. There is disagreement about the most desirable system state to protect. Subsequently, establishing the substantive precondition of the meta-capability Sustainable Ecological Capacity requires additional political and normative decisions. In these negotiations, political inequality and power distributions among stakeholders matter. Capabilities need to be specified and prioritized at the local level. Therefore, fairness in democratic decision-making processes is critical.

3.4.2 Implications: Integrating procedural justice

The challenge of co-evolution demonstrates the need to pay extra attention to procedural justice in adaptation research and policy. There are ways to include procedural justice in a capabilities-based framework. To start, in *Allocating the Earth*, Holland does not only discuss ecological limits, but also the precondition of sufficient political equality in the form of political capabilities (Holland, 2014; Schlosberg, 2012; Srinivasan, 2007). Participation and forms of deliberation are frequently mentioned as solutions to advance procedural justice. Yet, democratic theorists argue that certain background conditions need to be fulfilled to realize genuine deliberation. For instance, people need sufficient income and resources to develop the basic capacities for effective political participation (Bohman & Rehg, 1997; Holland, 2014). Equality of political participation is also reflected in Nussbaum's list in the form of the capability 'political

control over your environment' (Nussbaum, 2018). This notion is further developed by Holland (2017) as a concept for procedural justice in local climate adaptation. She defines 'political capabilities' as having the power to influence adaptation decisions' (Holland, 2017).

Along a different line of reasoning, but without making use of Nussbaum's universal list of central capabilities, Srinivasan arrives at a similar conclusion as Holland (Srinivasan, 2007). According to him, Sen's open-ended deliberative version of the capability approach does require non-procedural guarantees of political equality. The reason is that Amartya Sen relies on democratic deliberation to decide what the most valuable capabilities are (public reason). Subsequently, freedom and fairness in democratic decision making are key in Sen's writing. Hence, according to Srinivasan (2007), Sen would also have to support minimal preconditions that guarantee genuine deliberation. It is not necessary to defend a full list of capabilities, but it is required to secure sufficient political capabilities in capability theories.

Srinivasan mentions political capabilities, because he is concerned with actual opportunities for political participation. Highlighting the consequentialist properties of the capability approach, he states: 'it protects equality of substantive political freedom seen properly in the perspective of capabilities, not merely civil liberties and political rights' (Srinivasan, 2007, p. 457). How exactly to integrate procedural justice in climate adaptation ethics requires further research. Still, as a start, the ideal of striving towards equality of political influence provides an interesting intersection between Nussbaum's and Sen's approach to the capability approach.

A more pragmatic argument for focusing on procedural justice in further research is that even if philosophical academic argumentation could identify the ideal list of basic capabilities, or meta-criteria for sustainability or ecological limits, there still will be disagreement among stakeholders that practitioners must respond to on the ground (Holland, 2017). Climate adaptation is about landscape changes that may spark political conflict. Hence, we should anticipate and start more discussions about legitimate expectations and just transitions in climate adaptation (Green & Gambhir, 2020; Meyer & Sanklecha, 2014). Moreover, due to normative uncertainties it is important to keep options open. Future generations may prioritize capabilities differently than current populations (Taebi & Kermisch, 2020). The empirical case study of the Haringvliet controversy, with its decades-long negotiations and contested thresholds, supports these theoretical reflections.

3.4.3 Applicability and limits

The capability approach does not provide a complete theory to address adaptation justice. It can be used to provide an alternative assessment of public policy on different terms than, for example, the utilitarian cost-benefit analysis. Moreover, using capabilities as an analytical lens helps to focus on outcomes of policies and how these are shaped by personal, social and environmental conversion factors. This stands in contrast to approaches that distribute resources and liberties independent of peoples' context. In line with methodological pluralism, the goal is not to provide the 'best' method for policy assessment, but to test multiple methods and compare the different results (Goddard et al., 2019; Stirling, 2008). Further research is also needed to investigate complementary perspectives or extensions of the capability approach that go beyond human functioning and address the intrinsic value of ecosystems and other species.

Debates about changing thresholds in socio-ecological systems take place anywhere, although the circumstances and topic of the conflict will be different. Controversies to which the perspective of this paper can be of relevance are discussions about changes in landscape functions or the creation of new water quality or biodiversity targets. Comparable debates in the Dutch Delta, for instance, revolve around changes in the water table or initiatives to start de-poldering (Roth et al., 2017; Van Staveren et al., 2014; Warner & Van Buuren, 2016). The generalizability of this local climate adaptation case is a question to decide for researchers acquainted with other policy contexts. The context described is located in North-Western Europe, in a liberal democracy and a rich industrialized country. At the global level, eurocentric thinking should be avoided, especially considering the grave inequality in climate vulnerability between the so-called Global North and Global South. Still, there may be observations and theoretical reflections that also have explanatory value in other contexts. In recent academic thinking, there is also discussion about nature conservation versus understanding ecosystems as co-evolving and dynamic systems (Colten, 2019; Day et al., 2019; Dryzek & Pickering, 2018b).

The relevance of integrating empirical research into the discipline of philosophy is that lessons from real-life controversies can help to improve theory as well. Instead of abstract theorizing about possible future conflicts, we can learn from ongoing natural resource management controversies to direct philosophical research and develop an ethics of climate adaptation.

Chapter 4

Advancing justice in flood risk management: Leveling political capabilities

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4. Advancing justice in flood risk management: Leveling political capabilities

4.1 Introduction

Climate change poses enormous risks to areas prone to flooding. The IPCC identifies three factors that contribute to climate risk: hazard, vulnerability, and exposure (Reisinger et al., 2020). Hazard refers to natural hazards such as forest fires, extreme rainfall, drought, or sea-level rise. The concept of vulnerability refers to the capacity of individual groups and people to respond to these hazards. Faced with damages or risk due to climate change, those marginalized within their society or those with fewer financial buffers may have more difficulties in responding (Adger et al., 2006; O'Brien et al., 2007; Pelling et al., 2015). The third factor in the IPCC model, exposure, is to be understood in a geographic sense: are people or infrastructures located in areas affected by climate hazards?

In this paper, we focus on controversies about Flood Risk Management (FRM) strategies that aim to reduce the exposure of inhabitants and infrastructure to flood hazards by means of land use change or relocation. Examples of exposure reduction strategies in FRM are regulations that prevent construction in flood plains, buy-out programs as part of managed retreat, and coastal realignment in the name of nature restoration (Ajibade et al., 2020; De Bruijn et al., 2022; Haasnoot, Biesbroek, et al., 2020; Van Staveren et al., 2014). Uncertainties about the exact nature of climate impacts make it difficult to determine where current land use can be sustained and where this is no longer feasible or desirable (Alphen et al., 2022; Haasnoot, Biesbroek, et al., 2020; Klijn et al., 2016). Exposure reduction measures are especially prone to conflicts due the cultural, emotional, and financial attachments of inhabitants (Adams, 2016), uncertainties about the impacts of natural hazards (Zegwaard, 2016), and conflicting views about the best land usage in the future (Brackel, 2021; Hommes et al., 2016; Morita, 2016).

This paper examines which lessons we need to draw from the exposure reduction controversies described in FRM literature and what the political capabilities concept can contribute to advance justice in FRM (Holland, 2017). To reach this objective, we also provide a review of how justice is currently approached in FRM scholarship. This review identifies two key issues that need to be addressed by FRM justice. Subsequently, we show how the capability approach (CA) to justice can help to address these concerns.

The first key concern is that FRM controversies show salient inequalities in informal political influence in FRM decision-making. However, the FRM justice literature draws heavily on formal principles or rights-based frameworks, which do not sufficiently

pay attention to what different people are able to do with the rights and resources provided to them in practice. Political influence, socio-economic inequalities and patterns of cultural misrecognition are intertwined (Fraser, 1995; Young, 1990), so political inequalities need to be addressed in a comprehensive manner. The CA is context-sensitive and able to capture inequalities as they arise out of a multiplicity of patterns of disadvantage including concerns of recognition justice (A. Martin et al., 2016; Robeyns, 2003). Building upon the CA, we propose in this paper to resolve this gap and focus on leveling political capabilities to advance justice in FRM.

The second key outcome from the controversies described in FRM literature is the intrinsic value of self-determination for achieving justice in the decision-making about- and the implementation of exposure reduction measures. Freedom of choice and self-determination are central concepts in the CA as well, which will be further explained in section three. The CA's focus on the full breadth of people's agency in decision-making processes also resonates well with multiple streams in the recognition justice literature (Anderson & Honneth, 2005; A. Martin et al., 2016; Van Uffelen, 2022).

Subsequently, in section four, we apply the political capabilities concept from the CA to FRM and illustrate the importance of securing sufficient political capabilities in conflicts about exposure reduction measures. Furthermore, we argue that political capabilities should be guaranteed at the 'sufficiency' level and encompass both a lower and upper threshold to address inequalities in political influence. To conclude, we reiterate the main findings, provide suggestions for further research, and reflect upon the usability of sufficient political capabilities as a framework for justice in different FRM policy contexts.

4.2 Integrating justice in Flood Risk Management

This section describes existing approaches to justice in FRM controversies related to exposure reduction measures and subsequent building blocks to advance justice in FRM. There are ample examples of controversies related to land-use change and (in) voluntary relocations in FRM literature (Baker et al., 2018; Begg, 2018; De La Vega-Leinert et al., 2018; Edelenbos et al., 2017; Lynn, 2017; Otto et al., 2018; Roth et al., 2017). A number of lessons can be drawn from literature about these FRM controversies to advance justice in FRM.

4.2.1 Competing justice claims and inequalities in FRM decision-making

Flood risk controversies revolve around competing values such as safety from flooding, economic development, resource efficiency, ecosystem protection, landscape design, attachment to place, or justice. Thus, we also take (latent) conflict as a starting point for understanding FRM. Starting from the struggles around FRM controversies has several implications for integrating 'justice' in FRM. Not only do people disagree between the relative priority of different values, also within the larger multi-faceted concept of 'justice' multiple possibly contesting conceptions of justice are possible (Hickey & Robeyns, 2020). For instance, articles about economic inequalities in FRM mention a variety of distributive justice principles (C. Johnson et al., 2007; Rulleau et al., 2017). Distributive justice principles can be complementary to or compete with each other; as is the case with the utilitarian principle (measures should benefit society as a whole), the egalitarian principle (fair distribution between individuals), and prioritarian principle (concern for the most vulnerable) (Thaler, Doorn, et al., 2020, p. 107).[1] Which conception of distributive justice should guide the distribution of risks, costs and benefits in a society is subject to political debate.

Different justice claims draw attention to specific concerns related to the multi-faceted concept of (in)justice. Beyond distributive justice and procedural justice, other dimensions of justice relevant for FRM are: ecological justice, recognition justice, restorative justice, retributive justice, intergenerational justice or multispecies justice (Ajibade et al., 2022; Cañizares et al., 2023; Celermajer et al., 2021). Policy arrangements often contain characteristics of multiple principles, trying to find a balance between

1 Social justice concepts in FRM: egalitarianism (reduce inequality between different actors), utilitarianism(highest benefit to the community as a whole; not accounting for distribution), proportionality (individuals should not have to carry disproportional burdens of collective benefits), prioritarianism (FRM policy should focus on the most vulnerable members of a community), and libertarianism (focus is on individuals and protection of property rights; FRM limited to provision of hazard information) (Thaler et al., 2020, table 1, p. 107).

different justifiable principles and claims of injustice (Clément et al., 2015; Driessen & Van Rijswick, 2011; Kaufmann et al., 2018; Keessen et al., 2016). For example, FRM policy needs to strike a balance between a utilitarian concern for the wise usage of scarce public funds, prioritarian concerns for the most vulnerable, and concerns about ecological impact. Subsequently, disagreement between actors about which values to prioritize is an inherent part of water management (Joy et al., 2014; Zwarteveen et al., 2017).

Many authors writing about justice in FRM, climate adaptation or disaster risk reduction focus on FRM governance and processes for fair decision-making (i.e. procedural justice) (Ajibade et al., 2022; Alexander et al., 2016; Arnall, 2019; Begg, 2018; Tadgell et al., 2018; Wilmsen & Webber, 2015). This focus on procedural aspects of 'justice' is understandable considering the contested nature of FRM: conflict between actors and disagreements about competing values are omnipresent. However, as the previous section described, it is important to examine the connections between procedural justice and for instance patterns of misrecognition and other kinds of inequalities. Procedural justice theories can help to design fairer processes to resolve conflicts in FRM, for instance by mitigating the extent to which existing socio-economic and cultural inequalities influence the design of flood-risk management measures and strategies.

In FRM literature, the focus is often on procedural justice conceptualized in a more narrow sense as good government conduct during the implementation of FRM measures. The systematic literature review by Tadgell. et al. (2018) provides a synthesis of principles for good conduct in state-led relocation programs in lower-income countries: proactivity (take action before a crisis takes place), participation and communication, permanence (new sites should be habitable for the long-term), adequate compensation, and livelihood protection. Other examples of principles encountered in the literature are voluntariness, the principle of last resort, and that citizens should be 'better off' than before the relocation program (Arnall, 2019; Begg, 2018; Cernea, 1997; Doberstein et al., 2020; Hayward, 2008; Tadgell et al., 2018; Wilmsen & Webber, 2015). Ajibade et al. (2022, p.1) also mention good practices in managed retreat such as "improving community wellbeing, rootedness, and access to livelihoods, while also incorporating diverse justice concerns to different degrees".

However, it is often debatable which justice claims should be granted priority or how generic principles should be interpreted in specific situations. For example, the 'last resort principle' aims to protect people from those in power who might "use the excuse of reducing community exposure to climate change in order to conduct forced migrations for political or economic gain" (Barnett & Webber, 2009, p. 27 as cited in Arnall, 2019).

The subsequent question is: are there technically feasible alternatives available that would allow people to stay? And if so, how many resources is a society willing to use for protection measures to ensure that affected communities can continue to live and work in the same place? This openness for debate implies that there remains space for disagreement and discussions while applying proposed principles for good government conduct in FRM at the local level. And again, how these disagreements are settled and the degree to which they are influenced by existing inequalities matters.

Moreover, accounts of procedural justice in FRM too often only cover controversies occurring *after* the decision to implement measure X in a location Y has already been taken by a governing entity. Authors focus on instrumental participation, the mere implementation of government decisions, and formal procedural checkboxes such as the right to appeal and implementation criteria. Yet, procedural justice becomes relevant earlier in the political process: the informal debate about the question of whether measures to reduce exposure are necessary at all and where/how they should be implemented. In an evaluative framework for FRM governance, Alexander et al. (2016) argue that procedural justice contributes to the legitimacy of FRM, and consists of three elements: (i) there are opportunities for stakeholders to challenge decisions that have been made, (ii) stakeholders have equal access to the appeal process, and (iii) the process of resolving disputes is considered to be fair (ibid). These are relevant criteria, but the informal decision-making and lobbying phase *before* FRM measures are implemented also needs to be included in a procedural justice framework.

Social scientists, practitioners, and communities often call for closer involvement of affected citizens in the decision-making process to translate FRM knowledge into action (Binder & Greer, 2016; De Jonge & Klijn, Frans Ellen, 2022; Priest, 2023; Roth et al., 2017; Thaler, Seebauer, et al., 2020). As Cook et al. (2022) point out, these calls should go beyond instrumental participation and also look into real power-sharing. However, strengthening participation and access to formal decision-making processes does not resolve all issues. Attention to a wider spectrum of political influence is required. All inequalities that shape people's ability to exert political influence by advocacy, lobbying, and protesting are important factors to address to achieve justice in FRM. This includes mechanisms of misrecognition that shape people's political capabilities.

4.2.2 Recognition justice and the value of self-determination

Building upon critical theorists such as Fraser (1995), Honneth (2005; 2003) and Young (1990), Environmental justice literature often refers to the 'tripartite' model of justice since struggles for distributive justice (distribution of risks, benefits, and costs), procedural justice (equality of political influence and fair decision-making processes)

and justice as recognition are in practice connected (Schlosberg, 2007; Zwarteveen & Boelens, 2014). Misrecognition, the social devaluation and marginalization of people's way of being and doing reinforces inequalities and causes real psychological harm (Anderson & Honneth, 2005; Taylor, 1997; Van Uffelen, 2022). Manifestations of misrecognition in FRM can for example be found in the negligence of local knowledge and the intrinsic value or spiritual dimensions of ecosystems (Boelens et al., 2010; Stensrud, 2016). Other examples of misrecognition in FRM are disregard for land-based livelihoods, the persistence of mechanisms of coloniality (Sultana, 2022), and the reinforcement of social discrimination through FRM decision-making and outcomes (A. Martin et al., 2016).[2] The connection works both ways: patterns of misrecognition and cultural injustices shape people's ability to influence FRM decision-making and subsequently cause unequal outcomes, just as economic inequalities influence someone's social standing and opportunities to exert political influence (Fraser, 1995; Robeyns, 2003).

The lack of self-determination is also related to recognition (in)justices, as certain ways of life and relating to water are devalued and marginalized (Boelens et al., 2010; Eriksen et al., 2015; A. Martin et al., 2016). Academic literature about FRM controversies shows the need to address the intrinsic value of self-determination, especially in the case of exposure reduction measures and relocations. Self-determination signals the importance of having the opportunity to sketch one's own life trajectory (Minaravesh, 2023). Disregard of self-determination and freedom of choice featured in several studies documenting protests by local inhabitants against involuntary relocation or land use change programs (Bertana, 2020; Tadgell et al., 2018).

The distinction between voluntary and involuntary is fuzzy and many FRM governance arrangements consist of a mix of voluntary and involuntary elements (Arnall, 2019). In forced acquisitions, citizens may not even be given the choice to sell and receive compensation. Alternatively, relocation programs that see all other community members relocate or public services phased out may be voluntary on paper, but are often not experienced as such. Moreover, whether justice in FRM requires people to stay or enable them to live in a safer place depends on the specific context. The right against displacement, Nine (2016) argues, should be protected, since the home is constitutive for a person's autonomous agency and identity formation. Other scholars also defend the right of voluntary immobility and staying behind (Farbotko et al. 2020). Koslov (2021), on the contrary, emphasizes the stress inherent in staying put in areas susceptible

2 Which kind of inequalities and patterns of disadvantage are most salient varies per FRM controversy, as a wide range of inequalities affect people's political influence in FRM conflicts.

to flood risk. Yet, in all cases where people are relocated, quality participation in the development of relocation sites is critical, as the new place should allow people to lead a life similar to what they had chosen for themselves in their old location (Nine, 2016). Regardless of whether people choose to stay or go, loss of self-determination and freedom of choice about one's environment, livelihood, and way of life is a special kind of harm that cannot easily be expressed in monetary terms.

Just as with intangible losses such as attachment to place and psychological stress, the infringement of personal autonomy and loss of place or community cannot be fully compensated by buy-out sums and/or cost-benefit analyses based on utilitarian starting points. Moreover, Babcicky and Seebauer (2021) demonstrate that psychological indicators are relevant for understanding flood risk impacts on different people and differences in flood preparedness, fear of flooding, and self-efficacy. De La Vega – Leinert et al. (2018, p. 598) also stress that in Europe, transforming coastal land use affects people's "sense of safety and their sense of control over their land, their livelihoods and by extension, their lives." Hence, taking emotions, human agency, and psychology seriously in FRM is important to reach an integrated understanding of human wellbeing. Drawing lessons from the practice of development-forced displacement and resettlement for climate adaptation, Wilmsen and Webber (2015) argue that: "Affected people can help to plan, to build their capacities to respond to the difficult condition of resettlement – to engage in practice and not just in principle. This goes beyond participation to ensure that affected persons have control over their own futures" (Wilmsen & Webber, 2015, p. 79).

Existing governance frameworks often fail to include the value of self-determination explicitly enough, while affected citizens often do express their concerns about a lack of self-determination. Despite the literature being full of examples of controversies related to self-determination, existing ethics/governance frameworks in FRM focus primarily on formal participation criteria, principles of distributive justice, communication, or lawfulness. This raises the need for a conceptual framework that includes the full scope of justice, including human agency and self-determination, but is also able to provide guidance on the design and implementation of contested FRM-measures.

4.3 The Capability Approach

In the following sections, we propose building on the capability approach to Justice and specifically the concept of sufficient political capabilities as a way to advance justice in FRM. A strong asset of the political capabilities concept is the focus on the agency of people and their ability to engage in FRM politics, rather than on their vulnerability (Holland, 2017). Securing sufficient political capabilities does not only have instrumental value to reduce inequalities in FRM conflicts (§2.1), but also intrinsic value as it can help to mitigate psychological harm and protect the value of self-determination (§2.2).

4.3.1 Foundations

The capability approach (CA) is a framework for ethical and political analysis developed by Sen (1985, 1999, 2009) and Nussbaum (2000, 2011), and elaborated by among others Holland (2008a, 2017) and Robeyns (2017). The CA is a comprehensive method of analyzing and promoting human wellbeing by expanding people's capabilities (Alkire, 2008). The CA defines capabilities as what "people are able to be or to do" (Robeyns, 2017, p. 38). In other words, capabilities are a person's real opportunities to achieve personally valuable ways of being and doing (Holland 2017, p. 397). The CA is deliberately open-ended about what these valuable beings or doings are (Robeyns, 2017).

Individuals who belong to different communities and live in different contexts can decide for themselves what constitutes a valuable way to live (Deneulin, 2011; Rawls, 1993; Robeyns, 2017; Schlosberg, 2012). Because the CA is able to incorporate contextual differences and is open to value pluralism, many scholars highlight the CA as a suitable approach for dealing with inequalities in climate adaptation (Doorn et al., 2018; Dryzek & Pickering, 2018a; Holland, 2012; Jepson et al., 2017; Kronlid, 2014; Schlosberg, 2012; Sheller & Leon, 2016; Walker, 2009b). The open-ended nature of the concept of capabilities enables flexibility and creates space for the democratic determination of the most highly valued capabilities in a specific context (Deneulin, 2011; Walker, 2009b).

The capability approach addresses inequalities in a comprehensive manner, including patterns of social marginalization and discrimination. Capabilities are the opportunities or freedoms to realize valuable functionings (ways of being or doing). Just as there is a difference between a country's GDP and its citizens' wellbeing, there is a difference between the resources provided to people and what different people can actually do with these resources (Sen, 2009). The CA can be used to analyze people's differentiated abilities to use resources to achieve ways of being and doing.

Conversion factors describe how inequalities manifest in FRM because different people have unequal abilities to mobilize resources and rights, also due to social norms and patterns of marginalization (Robeyns, 2003, 2017).

All kinds of inequalities need to be accounted for to level political capabilities in FRM. Conversion factors represent the social, personal and environmental context in which individuals operate: including historical inequalities that shape differences between people's capabilities. In her response to Fraser's critical theory critique of the capability approach, Robeyns (2003) employs gender inequality examples to explain that the CA also integrates concerns related to recognition justice, although not exclusively. The capability approach to justice "offers a comprehensive view of the conditions needed for a good life that incorporates aspects of recognition, participation and distribution" (A. Martin et al., 2016, p. 258). The CA also acknowledges the salience of physical or mental (dis)abilities[3] that shape people's opportunities to realize basic needs (Robeyns, 2003). Capabilities are defined as opportunities because freedom is a central concept for Sen (1999).

Sen stressed the importance of the 'process of choice' with the following thought experiment: If someone does not leave their room all day because they prefer to stay inside, that is fundamentally different then if they do not leave their room all day because there is a gunman in front of their door (Sen 2009, p. 228). This thought experiment shows that a situation's 'justness' cannot only be determined based upon the substantive outcomes and that the process needs to be considered as well to characterize a situation as just. A situation can still be just when someone has the capability to do X, but chooses not to do X. This is relevant for FRM, since exactly this dimension of the 'process of choice' chimes with the concerns identified in the literature review about involuntary relocations and self-determination.

4.3.2 Reducing inequalities with the capability approach

The capability approach to justice can highlight differences between the needs of individuals/communities in climate adaptation and FRM and can subsequently justify additional government support for more disadvantaged groups (for example tools, additional money, or adjusted training courses). For instance, some people require additional support and resources to reach a similar level of flood resilience as other

3 Although this article focusses on exposure reduction measures in FRM, the CA has potential added value in the evaluation and promotion of capabilities related to flood safety and disaster preparedness as well. Especially considering differences in someone's physical abilities related to age or illness are relevant considering inequalities in flood preparedness and resilience during flooding events.

people who are given the same resources. Intersectional perspectives on adaptation justice can be incorporated into the CA, because an analysis of people's differentiated capabilities acknowledges all axes of existing social inequality, such as class, race, gender, age, ableness, geography, natural resource dependency, and their interrelations with other (dis)advantages (Ajibade et al., 2022; Mikulewicz et al., 2023; Wolff & De-Shalit, 2007).

Even though a plurality of capabilities has intrinsic value,[4] public resources are limited. Hence, difficult choices often have to be made about which capabilities to prioritize in public policy. Focusing on the fertility of the capability, or how this capability can mitigate other disadvantages, is helpful for determining effective policy interventions (Nussbaum, 2011, p. 45). In their empirical research, Wolff and De-Shalit (2007) describe multiple (dis)advantages and how they interrelate to create unequal outcomes. They empirically identify fertile capabilities (those that help to create more capabilities) and corrosive disadvantages (those that spill over to other domains).

Political capabilities are an example of a fertile functioning (Wolff & De-Shalit, 2007), because people with high political capabilities can engage successfully in decision-making processes about resource distributions and subsequently change policy conditions that shape other capabilities. Next, we will argue that considering the contested nature of exposure reduction measures, the concept of political capabilities is well-suited to advancing justice in Flood Risk Management.

4 Nussbaum developed a list of 10 central capabilities: 1. Life, 2. Bodily health, 3. Bodily Integrity, 4. Sense, Imagination, and Thought, 5. Emotions, 6. Practical Reason, 7. Affiliation, 8. Other Species, 9. Play, 10. Control over one's environment (political and material). This list influenced indicators for the United Nations Human Development Index, an alternative for cross-country comparisons based on the Gross Domestic Product. (Nussbaum, 2011).

4.4 Leveling Political Capabilities

4.4.1 Political capabilities

Nussbaum (2011) defines political capabilities as "having political control over one's environment". The first fleshed out paper on political capabilities in climate adaptation and water management was written by Holland (2017). She critiques top-down initiated participatory fora and public consultations, as these do not truly advance procedural justice. Public participation has been reported to falsely legitimize expert-driven FRM and transform into lip service of government agencies (Bertana, 2020), while in other cases it has failed to represent all citizens equally. For Holland, empowering vulnerable communities to shape adaptation decisions is an indicator of procedurally just climate adaptation (Holland, 2017). For disadvantaged groups "having the political capability to adapt means being able to apply enough political pressure within unjust adaptation decision processes to successfully push decisions in a particular direction" (ibid., p.397). Transformative adaptation, according to Holland, is a continuous process of decision-making in which citizens have real opportunities to influence decision-making processes. A procedural justice approach harnessing political capabilities focuses on the agency of individuals, while acknowledging that these individuals function within a web of asymmetric power relations and structural injustices (Arts & Tatenhove, 2004; Eriksen et al., 2015; Grin, 2012). Power asymmetries and existing inequalities can be challenged by strengthening conditions for political equality (Srinivasan, 2007). However, focusing solely on the lower threshold and disadvantaged communities produces a limited understanding of political capabilities.

In her 2017 article, Holland (2017) does not consider the opposite possibility that some actors have *too much* power to shape adaptation decisions (Brackel et al., 2021). Capability scholars were initially most concerned with bringing all human beings above capability thresholds, so that their most basic needs are secured. Yet, a more recent development in capability scholarship is to not only include thresholds, but also capability ceilings (Baard & Melin, 2022; Holland, 2008a, 2014; Robeyns, 2022). If people harm other people, future generations, or the environment by employing their capabilities to the fullest, posing limits to their capabilities may be justifiable (Holland, 2012, 2022; Robeyns, 2022). We argue that this principle should also be applied to political capabilities.

4.4.2 Political inequalities in Flood Risk Management

A capabilities-based framework for procedural justice in FRM should be applicable to situations in which people have too much political capability and situations in which people have too little political capability to shape FRM decision-making. An example of people having 'too little' political capability would be marginalized communities that are

subject to state-led relocation processes and hardly have the means to oppose or steer developments (Ajibade, 2022; Wilmsen & Webber, 2015). On the other end of the spectrum, we can find resourceful actors such as second-home owners and capital-rich companies that are able to secure high-value buy-out sums or flood protection measures funded with public money (Alexander et al., 2016; Brady, 2015; Fouqueray et al., 2018; Schakel, 2021).

Capabilities should be understood and analyzed in a contextually embedded fashion (Robeyns, 2017). Especially when looking at political capabilities, we should examine existing power structures, institutions and power asymmetries to understand opportunities and obstacles that different actors experience. People's abilities to influence decision-making intersect with patterns of (mis)recognition and social discrimination. In the USA, several geographers describe racial patterns in buy-out locations and investments in flood protection (Hardy et al., 2017; Loughran et al., 2019). Another example is the disparity between flood protection levels in the Dutch Delta and the Caribbean islands part of the Dutch kingdom (Haringsma, 2023). Moreover, highly-educated and elderly citizens are overrepresented in participation sessions and FRM decision-making (Van Buuren et al., 2012; Van der Meer, 2018; Warner et al., 2020). In the Netherlands, only the highly-educated appear to have independent influence on public policy (Schakel, 2021; Schakel & Van Der Pas, 2021).

The FRM literature presents several examples of situations in which it can be argued that individual citizens or local action groups had too much political power. For example, in the context of the 13/14 winter floods in England, the inhabitants of Somerset were able to attract a lot of attention through political networks and media (Alexander et al., 2016, pp. 45–46). Consequently, 10 million GBP of central government disaster relief funds were spent on only 150 homes in Somerset, while 4000 victims of flooding in the north of England did not receive this kind of compensation. Talking about the situation, an English NGO employee remarked: "large floods do become political footballs" (Alexander et al. 2016, p. 45). Similarly, in France, there have been reports of rich coastal communities pressuring local decision-makers to choose sea defenses over managed retreat (Clément et al., 2015; Fouqueray et al., 2018). In this French case, mayors used coastal land as electoral bait, since it helps to create employment and population growth, despite the associated risk of unsustainability and maladaptation considering long-term sea-level rise and coastal erosion (Fouqueray et al., 2018).

In the future, it is imaginable that powerful local action groups will obstruct climate adaptation measures or leverage funds to realize their desired type of adaptation or FRM project. In some cases, these local community efforts are much needed and can help to realize just climate adaptation, but this is not always the case. Handing over

power to 'the community' might sound laudable, but it is worth remembering that local populations are not monolithic. The local community level is fraught with competing interests and values. Hence, it is important to consider the distribution of political influence within and between communities when analyzing procedural justice in FRM.

Inequalities in political influence should at least be monitored to render visible which groups are systematically underrepresented in a FRM policy process. In response to a relocation process in Dhaka, Bangladesh, for instance, more affluent private landowners were able to write petitions and appeal to the Supreme Court claiming that their rights had been violated, while lower-income people from the same area were simply displaced (Nijhum et al., 2019). In New York, wealthy communities were found to have more capacities to leverage funds and lobby for voluntary buy-outs (Brady, 2015; Siders, 2022). And in their review of managed retreat cases, Ajibade et al. (2022, p.3) find that 'wealthy and white communities are often protected through in-site adaptation [...] [whereas] 'the poor often have little control over where they live'.

A contextual political capabilities analysis should be performed to ascertain whether to prioritize raising people above a basic political capability threshold or creating political capability ceilings. The legal-institutional context provides the conditions for citizens' political capabilities. For instance, according to Dutch law, it is possible to expropriate citizens in the name of flood management (Thaler, Doorn, et al., 2020). Hence, relevant questions of procedural justice include: which situations merit this measure and how can a just process be guaranteed considering the immense impact on the lives of affected citizens. In Austria, for example, landowners cannot be involuntarily expropriated and thus have a stronger bargaining position. Subsequently, the prices for voluntary buy-outs of agricultural land that is set to be repurposed as a retention area for flood risk management tend to be higher (ibid). In a situation like this, different concerns of justice become relevant, such as the costs of flood risk management for society as a whole, and how to secure other important values such as flood safety, resource efficiency, and sustainability (De La Vega-Leinert et al., 2018). In sum, excesses in either direction - having too much or too little political capability – create the risk of unjust situations in FRM. In certain contexts, solely focusing on strengthening political capabilities does not resolve the issue of political inequality and the resulting injustices in FRM.

4.4.3 Leveling political capabilities

Substantive commitments to strengthen political equality in flood risk management are necessary since existing inequalities and informal politics influence the outcomes of formal procedures. An account of justice that is concerned with the actual opportunities for political participation protects "equality of substantive political

freedom seen properly in the perspective of capabilities, not merely civil liberties and political rights." (Srinivasan, 2007, p. 457). Procedural justice is not only about good government conduct in the implementation of projects, but also about citizens' ability to propose alternative plans and amend government plans. Some people have good knowledge of how government and the wider planning system works and can mobilize relevant networks, while others feel that 'the government' is a threatening, black-boxed institution. Despite the usefulness of trying to develop substantive principles of good FRM, what matters most for application in practice is identifying which actors are able or unable to push, prioritize, and interpret the range of values, norms, and principles that apply to FRM (Holland, 2017). Creating more equality in terms of political influence might help to settle disagreements about FRM in a more just manner.

A contextual analysis of political capabilities can help to show which actors are below or above the threshold of sufficient political control over their environment. This information can help to develop tailored mitigation measures to create a level playing field and remove barriers to influence FRM and climate adaptation decisions. Scholars should take into consideration the following elements to operationalize the concept of political capability: (a) the ability to mobilize expertise and/or counter expertise, (b) the possibility of alliances with other (more powerful) stakeholders, (c) the ability to learn media and presentation skills, (d) knowledge of government procedures and timing of decision-making processes, (e) resources: time to attend meetings and organize activities, funds to support lobbying activities, and relevant network to strengthen lobbying efforts, (f) social/cultural capital and social cohesion of a community (Edelenbos et al., 2017; Holland, 2017) (figure 5). These informal dimensions of having sufficient political capabilities, next to formal political rights, can also help to guide scholars and policymakers on how to implement political capability thresholds and ceilings.[5]

Assessments of what constitutes 'too much' political capability will vary by place, policy domain, and time, sometimes even within the same country. Nevertheless, we can learn from the experiences and justice claims voiced by people affected by (in)voluntary relocations in the past all over the world. In situations where basic civil rights and legal protections are not respected or enforced, securing sound procedures/institutions for information, compensation, and appeal require attention (political capability thresholds). Hard-fought political freedoms, which are still contested around the globe, should not be thrown away, so securing the lower threshold of sufficient political

5 The political capability thresholds and ceilings are represented by the lines above and below the icons of people debating/conversing in figure 5.

capabilities remains vital. In contexts where civil rights are generally respected and sound procedures have been implemented, more attention can be paid to improving procedural justice related to unequal lobbying power and limiting the opportunities of certain actors that harm other beings and have too much influence in FRM decision-making (political capability ceilings).

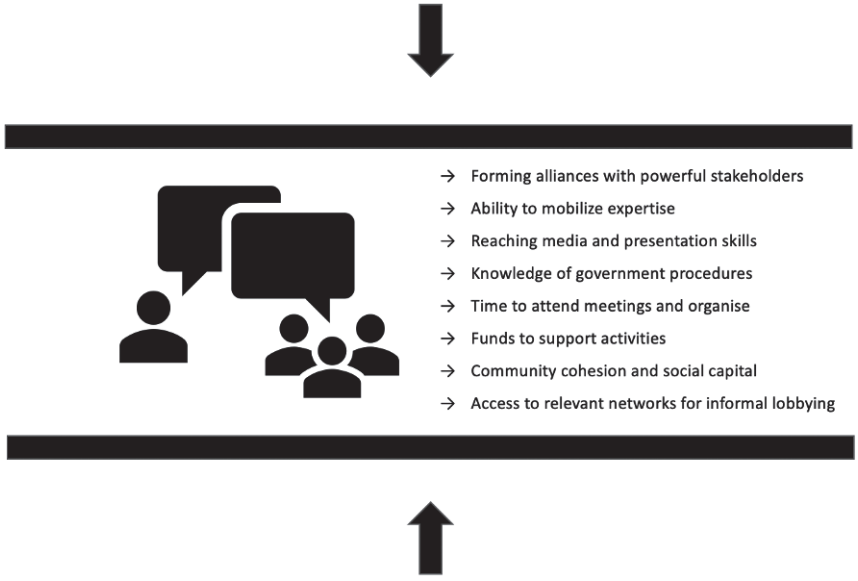

Figure 5. Illustrative and non-exhaustive list of informal dimensions of political capabilities

In order to balance people's political capabilities, a range of context- and power-sensitive planning and implementation tools should be developed to mitigate possible biases and structural barriers. For example, the right regulations within a democratic state can help to create a more level playing field for lobbying activities. Options to be investigated are increasing avenues of contestation (Gaventa, 2006; Stirling, 2008), increasing the transparency of the policy process, rules for funding interest groups and political parties, capacity building activities, and the provision of expertise or financial resources. Which support tools are most needed and helpful will have to be decided on a case-by-case basis. Nevertheless, the first step consists of analyzing the distribution of political capabilities in a specific FRM controversy.

4.5 Conclusion: Sufficient political control over one's environment

In this paper, we proposed the capability approach (CA) as a framework to address questions of justice in FRM. Inequalities in political influence are often present in FRM controversies and especially relevant in the case of contested exposure reduction measures and involuntary relocations. Assessing people's political capabilities can help to analyze and possibly address inequalities in political influence in FRM in a way that also acknowledges broader social and cultural inequalities through the conversion factors. We propose defining political capabilities as having sufficient political control over one's environment. In this way, the analysis can include both actors that have too little as well as those that have too much political influence. Besides, the literature also highlights the relevance of the value of self-determination in flood risk controversies. The importance of self-determination is well reflected in notions that are fundamental to the CA, such as freedom and human agency and also reflects concerns related to recognition justice. People want to have sufficient control over their environment and to choose their preferred livelihood and way of live. Our analysis also shows that self-determination does not imply unlimited political control, as this necessarily comes at the expense of others. Key is that all people reach a level of sufficient political control.

4.5.1 Limitations

A limitation of our conceptualization of political capabilities is the underrepresentation in political decision-making of other species and future generations. There are interests and values that span beyond the geographic boundaries of communities, but still should be included in adaptation decisions, such as environmental integrity or resource efficiency. Exposure reduction measures may be justified out of concerns for future generations, public resource efficiency, or ecological justice. Currently, these non-human concerns are only accounted for as far as humans advocate for these interests.

A possible objection against using the CA is that the analysis of inequalities in political capabilities and providing differentiated public support is information and resource-intensive. It is important to acknowledge multiple dimensions of social inequality and contextual differences, but practitioners often struggle with limited time and resources. While this objection applies – in differing degrees - to all interventions aimed at strengthening procedural justice, the context-sensitivity of the CA is a strength but also resource-intensive. Apart from the moral reasons that dictate why disadvantaged communities deserve for sufficient resources to

be invested in these procedures, there are also more pragmatic reasons for doing so. The resources invested in strengthening procedural justice may have a positive impact on the communities affected and strengthen people's capabilities also beyond flood resilience.

4.5.2 Future research

Future research should delve into determining what constitute as just political capability thresholds and ceilings in different contexts. What is 'too much' and who gets to decide what is 'too much' are important questions for further scholarly reflection. A key question in research into limitarianism and capability ceilings is how to establish upper limits and how to draw these boundaries in a legitimate manner. We need to avoid falling in the trap of technocratic top-downism, while at the same time not shying away from reconsidering existing power asymmetries and innovating institutions. New kind of institutional mechanisms and yet-to-be-developed interventions can help to implement just capability ceilings. Structural changes in a country's legal-institutional framework may sometimes be needed to guarantee political equality. For example, policies could aim at empowering citizen lobbying groups (Alemanno, 2017), but if large corporations have significantly more lobbying power (Schakel, 2021), such an effort is insufficient to reduce power asymmetries and improve democratic equality. Flood risk practitioners by themselves cannot eliminate existing socio-economic and political inequalities. However, they can help to prevent reinforcing these inequalities and perhaps create a more level playing field in terms of political influence in FRM. This is relevant, because we need to avoid scenarios in which 'big fish devour the small fish' (Sen, 2009), while deciding upon the best approach to mitigate flooding in the future.

Chapter 5

Just Transitions in climate adaptation: Assessing state-led involuntary relocations and land use change with the capability approach to justice

This chapter is currently under review and co-authored with Udo Pesch and Neelke Doorn.

5. Just transitions in climate adaptation: Assessing state-led involuntary relocations and land use change with the capability approach to justice

5.1 Introduction

As the impacts of climate change manifest worldwide, more and more land use changes are required. People living in drought-affected land or storm-struck coasts have to find ways to adapt (Haasnoot, Biesbroek, et al., 2020; IPCC, 2022). Scholars are increasingly focusing on questions of justice in climate adaptation because climate impacts aggravate all kinds of existing inequalities (Kaufmann et al., 2018; Neef & Benge, 2022; O'Hare & White, 2018). Adaptation measures benefiting the general public good can inflict financial and emotional harm on individual citizens who have to make room for them. Every land use change creates winners and losers. Hence, striving toward a *just transition* in climate adaptation also means seriously assessing the impact of adaptation measures on individual citizens. However, theories of justice are not automatically well suited to help practitioners address questions of justice at the local level (Siders, 2022; Voisard & Wallimann-Helmer, 2023).

The capability approach (CA) to justice is often mentioned as a substantive ethical framework for addressing justice in climate adaptation, one attuned to practice, justice pluralism, and contextual differences (Cañizares et al., 2023; Kronlid, 2014; Schlosberg, 2012; Schlosberg et al., 2017; Walker, 2009b). Yet, there are few fully developed applications available. We therefore conducted an interpretative ethical study aimed at developing and applying an operationalization of the CA to assess land use change conflicts and (in)voluntary relocations. We evaluated the impact of past state-led land use change projects in the Netherlands. Insights from our capabilities-based assessment can help to advance adaptation ethics and support sustainability practitioners in realizing just transitions.

We begin with the conceptual foundations of our capabilities-based approach to justice in climate adaptation, followed by the methodology used to integrate citizen and practitioner perspectives in our empirical-ethical assessment framework. After describing the context and relevance of studying these controversies in the Netherlands, we present our CA operationalization and assessment of Dutch citizens' experiences with past land use change and state-led relocation. We ask three interrelated core questions: 'What is a valuable way of life for this person?', 'Can the room for choice be expanded?', and 'What are options for providing differentiated public support?'. The discussion and conclusion reflect on the merits and limitations of our operationalization of the CA to assess adaptation transitions.

5.2 Drawing from the capability approach to integrate justice in climate adaptation

5.2.1 The capability approach

In the 1980s and 1990s, Amartya Sen and Martha Nussbaum initially developed the CA to critique the evaluation and development of international development policies (Crocker, 1992; Nussbaum, 2000, 2011; Robeyns, 2005; Sen, 1985, 2004). The critique was that instead of focusing on countries' Gross Domestic Product, the focus of international development should be on enhancing people's capabilities. The term capabilities refers to "what people are able to be and to do" (Robeyns, 2017), emphasizing the need to create 'real' opportunities for individuals. The CA pays special attention to human diversity and differences in peoples' attachments and goals in life as well as to inequalities between people's capabilities.

The CA is called an 'approach' and not a 'theory' because multiple interpretations and versions exist (Alkire, 2005; Robeyns, 2017). The capability approach (singular) refers to Amartya Sen's version of the CA, which emphasizes freedom of choice and democratic deliberation (or 'public reason') (Sen, 2004, 2009). Nussbaum's capabilities (plural) approach is a 'thicker' version of the CA that more heavily leans upon Aristotelian roots and Rawlsian principles such as political liberalism and Rawls' reflective equilibrium (Deneulin, 2013, 2011; Rawls, 1993). Both Sen and Nussbaum agree that 'capabilities' should be the key metric to assess justice instead of 'primary goods' or 'resources' (Nussbaum, 2000; Sen, 1979, 1999, 2009). Amartya Sen also explicitly contrasts his capability approach to 'traditional' theories of justice such as Rawls Theory of Justice and utilitarianism (Sen, 1979, 2009). Sen argued that critical aspects of justice were not sufficiently covered by these existing approaches to justice.

Another distinction between Sen and Nussbaum is how they select the most important capabilities to be protected. Sen aims to derive 'basic' capabilities from 'public reason', democratic deliberation in a specific context. Nussbaum also recognizes the value of democratic deliberation and cultural sensitivity, but in addition developed a list of 'central' capabilities to be protected worldwide (Nussbaum, 2000, 2011).[1] Nussbaum's list was developed in collaboration with international scholars and was primarily intended as an open-ended guideline. Still, this list is critiqued for lacking democratic legitimacy, being based on Western liberal-centric assumptions (Srinivasan, 2007), and for not being sufficiently attuned to local dilemmas and priorities.

1 Nussbaum developed a list of ten central capabilities: 1. Life, 2. Bodily health, 3. Bodily Integrity, 4. Sense, Imagination, and Thought, 5. Emotions, 6. Practical Reason, 7. Affiliation, 8. Other Species, 9. Play, 10. Control over one's environment (political and material) (Nussbaum, 2011).

Nussbaum's (2011) list of central capabilities should not serve as a blueprint, but can help to inspire and provide examples of what kind of capabilities may be valuable to protect in a specific context. The CA's goal is to increase people's options to realize valuable ways of being and doing (Nussbaum, 2011). With regard to involuntary relocations and land use change, especially the capability 'political control over one's environment' seems relevant (Holland, 2017; Nussbaum, 2011). Yet, it remains important to leave space for individuals and local communities to determine what the most valuable ways of being and doing are for them.

We use the term capability approach (singular and abbreviated to CA) in the rest of this paper, because Sen's version of the CA is more open-ended and thus allows for individual researchers/practitioners working on climate adaptation in a specific context to make more choices themselves about the research design and selection of relevant capabilities (Robeyns, 2017). It is crucial to ensure that capabilities-based assessment frameworks are bottom-up developed and that applications of the CA are attuned to cultural diversity and contextual differences. Nevertheless, also for Sen's version of the CA, securing political equality is a key pre-condition for the democratic deliberations about which capabilities to protect (Srinivasan, 2007).

The open-ended CA also better captures the important aspect of "recognition" in environmental injustices, at least better than utilitarianism or Rawlsian justice (Edwards et al., 2016). The CA allows for and "recognizes multiple ways of being and relating to the environment" (Schlosberg, 2012, p. 446). Relational values such as place attachment, cultural heritage or spiritual value stem from humans valuing their living environment, including relations between particular objects and beings in their environment (Deplazes-Zemp, 2023). Distinguishing different ways in which people relate to their environment helps to explain conflicts and value disagreements (Boelens et al., 2010; Deplazes-Zemp, 2023, pp. 2–3). Just as intrinsic values, relational values cannot be fully translated into instrumental terms such as ecosystem services or monetary compensation sums (Deplazes-Zemp, 2023), but nevertheless need to be accounted for in the ethics of climate adaptation. The open-endedness and context-specificity of capability-based assessment frameworks create space for the multiplicity of human-nature relationships and accommodate that different communities may prioritize other kinds of capabilities in climate adaptation.

Another core aspect of the CA is its focus on differences between people: inequalities and individual losses. This contrasts aggregated policy assessment methods that measure society-wide impacts, most notably the cost-benefit analysis (CBA) (Bos & Zwaneveld, 2017). Innovations exist to broaden the CBA with societal and environmental

impact factors (Doorn, 2019). However, ultimately, CBA's focus on "the greater good" and society-wide costs and benefits rather than differentiated individual human needs. Assessing overall benefits for the most people, possibly also including non-humans and future generations, is important. Nevertheless, justice in climate adaptation also means paying attention to the individuals that "lose out" in these transitions.

Social scientists studying adaptation justice also emphasize the need for empirical investigation of adaptation struggles and voiced claims of injustice on the ground (Barnett, 2018; Rahman et al., 2023). Contrary to other ethical theories such as Rawls's theory of justice (1971), the CA explicitly starts from empirical injustices instead of from abstract theorizing (Sen, 2009). The CA requires engagement with people voicing claims of (in)justice to identify valuable context-dependent capabilities.

5.2.2 Operationalizing the capability approach to assess land use change conflicts

We organized this article around three questions that resulted from a reiterative process to align our empirical research findings with theoretical notions of the CA. These interrelated questions focus on specific aspects of justice in adaptation transitions (Table 3).

Table 3. Capabilities-based framework for just transitions in local climate adaptation

CA dimension	Questions
Recognize multiple valuable ways of life	What valuable ways of life are affected for this person?
Room for choice	Can people's room for choice be expanded?
Differentiated support	How can differentiated public support be provided?

As the CA dimension related to multiple valuable ways of life suggests, people have different attachments and relate differently to their environment in land use change conflicts. An advantage of the CA compared to resources and rights approaches is that it explicitly integrates emotional responses as part of what justice entails (Nussbaum, 2001, 2008). People's values and attachments often differ from what planners assume is important to them, so it is critical to ask questions about what they value and why and what they want to protect.

The term *capability* refers to the possibility or option to be or do something. A *functioning* is the realized option: how someone realizes a capability in practice. For instance, the capability of mobility can be realized through a range of functionings (e.g., cycling, driving, taking public transport). The distinction between the capability and the

realized functioning leaves an open space and helps to imagine alternative futures where someone's valued capabilities and way of life can still be protected. Behind the functioning of being a dairy farmer, for example, may be the valued capabilities of having a land-based livelihood, protecting family heritage, and valuing a close-knit community.

Focusing on values instead of interests or resources can help uncover what is at stake for people beyond the material objects of contestation. Talking with people about the values behind their materialized functionings helps to identify – together with the people affected – which valued capabilities are at stake and how those values may be continued in ways that are more sustainable and climate resilient. A strength of the CA is its aim to increase options for numerous valuable life forms to flourish rather than just one (Schlosberg, 2012).

The difference between a capability and a functioning also reflects the importance of self-determination and choice, as reflected in the second CA dimension about room for choice (Sen, 1999). Increasing peoples' capabilities means expanding their options, but it is up to citizens themselves to decide whether to realize these capabilities into functionings. Returning to the mobility example: an individual can have the capability to move to work, but may choose to stay home and not realize that capability into a functioning. "Room for choice" in our assessment of (in)voluntary relocations signals not only the plurality of valuable lifestyles that people are free to choose, but also the intrinsic value that experiencing sufficient agency has to human well-being (Nussbaum, 2011). However, this openness does not mean that anything goes. In CA literature, scholars discuss how setting limits to capabilities is also needed to increase the capabilities of non-humans and future generations (Holland, 2014, 2022; Robeyns, 2022).

Lastly, the CA is useful for assessing a broad range of inequalities and justifying differentiated public support. People provided with the same resources or formal rights may not be able to realize the same level of functioning due to historical, cultural, or economic inequalities. Instead of offering the "right to participation" to check a procedural justice checkbox, a capabilities analysis assesses whether people are able to translate that right into a functioning and whether there are inequalities between people due to mediating *conversion factors*.

Conversion factors are social, personal, and environmental conditions that shape an individual's life experience and capabilities (Robeyns, 2017). Personal conversion factors relate to differences in talents, (dis)abilities, character, and psychological resilience that explain why certain people require different or more (public) support to realize

the same level of functioning as others. Social conversion factors can be patterns of marginalization that disadvantage certain people or cultural norms that influence who is or is not able to realize certain functionings. Examples are farmers who experience barriers to asking for advice, minorities whose options for political representation are constrained, or women who are discouraged from riding a bike due to cultural norms.

A capabilities-based analysis aims to spot salient mediating conversion factors to subsequently identify options for differentiated public support and adjusted tools (Wolff & De-Shalit, 2007). Climate justice literature is also concerned with intersectionality, the interplay between different disadvantages (Mikulewicz et al., 2023). Researching the combination of relevant social and personal conversion factors in a specific situation helps to expand the capabilities available to all citizens by providing differentiated support.

The following sections use the three questions in Table 3 to capture what is at stake for citizens during (in)voluntary land use change processes in the Netherlands. We not only examine people's various attachments and views on the good life but also identify possibilities to expand room for choice and provide differentiated public support.

5.3 Methodology

In this interpretative empirical ethical study, we integrated citizen experiences with ethical theory. The first author held twenty-one in-depth interviews with citizens affected by state-led land use change and/or (in)voluntary relocation processes in the Netherlands. The legal-institutional framework of rules and procedures was the same nationwide, but interviewees came from different municipalities and regions. We were therefore able to learn from their experiences with state-led land use change beyond the specifics of a local controversy and could thus uncover more diverse stories. Moreover, the geographic distributions helped to secure interviewees' privacy: they cannot be retraced to a specific local controversy, which often affects community relations. The sample was designed for highest diversity regarding socio-economic situation, farm size, household versus farmers, and position in the local controversy (for/against). Additionally, nine legal experts, policy officers, and a land agent[2] were interviewed to triangulate findings and better understand procedures beyond what could be learned from studying policy and legal documents.

2 An expropriation expert who can act as a representative of private or public actors in an expropriation procedure.

5.4 **Situation:** Climate adaptation and land use change conflicts in the Netherlands

Anticipating climate change in the Dutch delta requires space for adaptation measures such as water retention basins and dike reinforcements (Alphen et al., 2022). Land use change may be needed to cope with increasing drought, flood risk, salinization, and peatland subsidence (Bartholomeus et al., 2023; Brackel, 2021; van den Ende et al., 2023). The low-lying Dutch delta is densely populated and roughly 60% of the land is susceptible to flooding (Pieterse et al., 2010). The Dutch government has therefore had to implement state-led relocations for flood protection, most recently the Room for the River program and the High Water Protection Program. Such adaptation measures are often contested locally, but Dutch water management is often approached in a techno-managerial and depoliticized manner (Kaufmann et al., 2018; Roth et al., 2021). Formal options for participation are always legally granted in projects' planning and implementation phases, but the details of how participation is organized depend on the situation.

There are various degrees of (in)voluntariness in Dutch state-led relocation and land use change processes. Expropriation is the most clearly involuntary form. The Dutch Water Act allows expropriation in the name of water safety (Van Doorn-Hoekveld et al., 2022). Other forms are voluntary buyouts, voluntary or involuntary land consolidation processes, and imposing obligations on landowners to consent to or tolerate water authority interventions on their private property. Some citizens decide to sell their land by themselves, even without formal expropriation procedures, due to the uncertainties associated with pending government plans. In the most voluntary category, people regard the government project as a means to reach their own life goals and thus perceive it as an opportunity.

For our research cases, we selected past dike reinforcements, flood plain restorations, nature developments, and de-poldering projects throughout the Netherlands. These land use changes required shifts in livelihoods, changes in crop patterns, rises in water tables, and sometimes (in)voluntary relocations of houses. Every project involved a long trajectory of planning and political decision-making followed by a legal procedure to implement the changes. The legal procedure also included formal guarantees for appeal and financial compensation (Rijkswaterstaat, 2022). The following section explores the subjective experience of citizens affected by (in)voluntary land use changes in the cases studied.

5.5 Assessing state-led (in)voluntary land use change in the Netherlands

This section analyzes the experiences people had with (in)voluntary relocation and land use change conflicts in the Netherlands. Each subsection focuses on one of our three questions: What is a valuable way of life for this person? Can the room for choice be expanded? What are options to provide differentiated public support? The questions are connected and together they provide a capabilities-based assessment of justice in land use transitions.

5.5.1 Valued ways of life at stake

As explained earlier, the CA recognizes and aims to support a plurality of valuable life forms. Understanding just transitions in land use change means comprehensively assessing how people's life goals, livelihoods, and living environments are affected. The stress of a pending state-led land use change/relocation project makes people reassess their lives and fundamental choices. For some, it is seen as a major life event.

5.5.1.1 Human diversity

Interviewees' responses to state-led land use change and relocation plans varied depending on their personal situations and goals in life (i.e., life projects). Some people's life projects better aligned with the government's plans than others. People's views on how many alternative livelihood options were available and acceptable to them also varied. Some citizens viewed their land as primarily a business. Thus, they may have been able to part with it fairly easily, especially if their home was not involved. However, other citizens had formed deep attachments to the land. Experiences also differed when citizens had just moved into the area versus when the house had been in the family for hundreds of years. For example, in the South-West Delta, where people had worked to restore the land after the 1953 flood, many felt a strong desire to protect the arable farmland and continue the work of previous generations. The following excerpts from the interview transcripts highlight the diversity of experiences:

> *"I would have to go to school again and learn a different profession. That is not my goal. Farmers, we think in generations, not in the short term"* (Interview 1).

> *"Look, I mostly feel sorry for our neighbors. Because many farmers just had to leave. All people we knew really well. And, well, that is of course…But for us, it was the opposite. For us, the project provided opportunities. Because we had land that we had to sell that they really wanted to buy. We were not a larger farm, and we didn't want to continue as full-time farmers anyway"* (Interview 18).

"When we came to live here and heard within a month that we might be expropriated…you think, ok, this is not fun. But you are also not fully attached to your house…and people in the neighborhood told us we shouldn't worry, because there are good settlements and rules for compensation, so…" (Interview 22).

"The threat, the uncertainty, that was the worst. I had a neighbor, when the first letters came […], he said, 'I can't sleep because of it [the de-poldering plans]. On the night of the flood disaster in'53, I protected the dikes with my own hands, putting my own life at risk. And now they want to cut them open!' […] And a woman in [another de-poldering project] said that she lived on the farm that once belonged to her parents. That she had promised them that she would never sell or let go of the farm… and if they [the government project] came, she would hang herself" (Interview 11).

5.5.1.2 Resilience

Our interview results showed that people's resilience increases when they have access to multiple livelihood options. However, they also have to regard those options as valuable alternatives that match their capacities, interests, and desires for their lives. Interviewees who were already active in the world of government representation or who worked part-time for another company found it easier to imagine changing professions. The availability of alternative acceptable livelihood options seemed to be linked to existing inequalities. Farmers who perceived they had fewer acceptable options felt they had more to lose. For example, some farmers valued the freedom they have and feared they would lose that freedom if they had to change professions, especially if they perceived the only jobs available to them would be in factories or supermarkets.

Three interviewees reported that even though the land use process had been tough and painful, they believed they were better off now because of their change in occupation or because they enjoyed living in their new house. Some interviewees shifted from industrial agriculture to a diversified farm with nature-inclusive farming and a focus on education about sustainable food and healthier soil. Others started a campsite or even a full-time care facility. Water management projects can also provide opportunities because the compensation money may allow people to realize (new) dreams and start new businesses that would not have been possible otherwise.

However, in interactions with affected citizens, a careful balance between recognizing loss and offering opportunities is important. Interviewees reported feeling hurt and misrecognized when government officials moved too quickly to the "opportunities" part of the land use change. Conversely, one farmer stressed the importance of administrators supporting people's efforts to build a new and better future:

> *"I think...[government practitioners] should immediately try to build bridges...Who is in front of me? Am I sitting with someone who wants to make their future here or who wants to continue in a different location? It would be fantastic if they provided starting points for...more light on the horizon. Searching together for the way forward."* (Interview 17).

5.5.1.3 Uncertainty

The uncertainty of a long planning process, which can last from five to even over fifteen years, often implies that people can no longer expand their business or improve their house. They feel like their life is on hold. In addition, recent Dutch agricultural policy has been very unstable. Providing sufficient clarity early on in a land use change process is therefore important. Interviewees acknowledged that some uncertainty during the planning and decision-making process is unavoidable, as the trade-off would be that people are confronted with a fait accompli. Providing options for participation is important, but too-long periods of uncertainty strain peoples' mental health and their ability to invest in the future. Moreover, entertaining multiple scenarios in participation or co-creation processes can maintain citizens' hopes of being able to continue living and working in the location. But after the many years of the decision-making process, the conclusion may still be that this is not possible.

> *"There were people who had lots of hope, for a long time [the decision-making process lasted for over 10 years]. And now [after the municipal decision has been made], finally, there is a point of, ok, there is no more hope of being able to farm here. And I think that can also bring peace [...]. And I think, if at one point, these people have found a new place where they can be happy...That people have something to work toward again."* (Interview 10).

Several interviewees and policy officers thought an additional 10% would be fair monetary compensation for having to relocate and for the uncertainty that puts people's lives on hold, especially when the relocation is only in the interest of the general public or citizens living elsewhere.

5.5.2 Room for choice

Room for choice is another critical part of the CA. Though the availability of sufficient real choices for citizens is clearly relevant in the planning and decision-making process, our results show that it is also relevant in other stages of the land use change process, such as the design and implementation phases.

5.5.2.1 Degrees of (in)voluntariness

The degree of (in)voluntariness in the land use change process shapes peoples' experiences. Some interviewees described land use transitions as a threat and as something forced upon them. Others also regarded the transition as an unfavorable external event that happened to them but still felt they had sufficient agency throughout the process.

In the Netherlands, the government is legally required to first try to amicably settle land sales. However, during these "voluntary" negotiations, citizens know that the government can proceed with involuntary expropriation if negotiations fail. Thus, some citizens experience the preparatory research and participation sessions as a threat.

> *"As a farmer, you know that sometimes you have to leave, but it is also the way in which you have to leave. [...] They call it "voluntary" buyouts. But they go for older people without successors or those under financial pressure [...] Is that voluntary? And the farmers that remain face even more pressure to move, for the neighboring nature area that is being extended [...] It feels threatening when you are confronted with these plans. [...] The human aspect is sometimes lost...people come to talk to you, and sometimes they even say, "the plans will continue anyway, are not stoppable, so make sure you cooperate so we can take care of you, but you will leave this area in the end."* (Interview 1)

Confronted with pending plans for redevelopment of an area, some interviewees stated that they wanted to "fight to the end," whereas others eventually decided to "voluntarily" sell their land. Reasons for selling were that they were exhausted by the uncertain planning process or that they realized the municipality's or national government's decision was not going to change. These interviewees described how they searched for alternative opportunities to make the most of the new situation, and for some, that meant selling. Although their move was sparked by the land use change process, having an internal reason to move rather than just an external force made it less painful.

> *"I had the feeling relatively early, because I dived into what a national planning decision means and realized what it meant for our chances and opportunities for resistance, and I realized that I had to move forward, that I had to start taking opportunities instead of focusing on the threats. And well, that made the process easier for me, probably."* (Interview 14, farmer relocated).

5.5.2.2 Expanding room for choice: Land consolidation and permitting

Land consolidation and permitting are alternatives to buyouts. In the past, large-scale exchange and restructuring of land in the Netherlands took place through land consolidation (Van den Bergh, 2004). Independent facilitators such as the land

register office help to guarantee property rights and search for win-win solutions. Land consolidation can be voluntary or compulsory: if several parties agree on a new spatial plan, the "missing link" may be forced to collaborate.

Interviewed land register officers mentioned the benefits of land consolidation: citizens receive land in return for land, instead of only monetary compensation. Thus, citizens who want to continue farming still have access to land. Land is a scarce resource in the Netherlands, so farmers who receive only monetary compensation often cannot find suitable land for a new farm within the country. Furthermore, emotional attachments to particular pieces of land can be taken into account in a voluntary trading process. Land consolidation works best if existing functions, such as nature and agriculture or industry, need to be better distributed over the area. When a new function needs to be introduced, such as a road or new water retention basin, expropriation is often necessary due to land scarcity, especially in the delta region.

Another alternative practitioners mentioned was permitting, that is, imposing obligations on landowners to consent to or tolerate water authority interventions on their private property. In this case, a landowner has to allow a certain function on their land, but ownership is not transferred. Owners are compensated for the loss but have less access to financial and legal assistance by the government, compared to expropriation procedures. A benefit of this alternative is that when someone does not want to leave the location due to community or other attachments, the government does not have to sell the land on the open market to comply with antitrust law.

Legal and policy officers preferred to prioritize voluntary selling, land consolidation, and permitting wherever possible. These alternatives to expropriation reduce emotional burdens for citizens and conflicts in court. However, practitioners also stressed that considering future challenges and land scarcity in the Netherlands, it will not always be possible to reach win-win solutions and stick to only voluntary exchanges of land.

5.5.2.3 Expanding room for choice: Participation

It has become common practice in the Netherlands to include various forms of participation in water management (Roth et al., 2017). However, none of the interviewees were happy with the participation sessions in their area. Though they all wanted the opportunity to influence designs, they were frustrated by the process: the loud citizens dominating meetings, the associated long period of uncertainty, and the (unpaid) time they had to invest in the meetings.

> *"Those participation sessions? I hate them. They are terrible. Jumping around a map with each other. And then there is one know-it-all participant who dominates the atmosphere of the evening. And you feel like…what are we really doing with this map? But you know that the one who shouts the loudest, in the end also gets the most out of the process. So you have to be involved. Terrible."* (Interview 14).

Moreover, interviewees perceived a lack of influence on the final plans, contrary to expectations raised at the beginning of the participation process. In some cases, this process provided false hope that people could stay on their land and thus prolonged people's uncertainty and delayed their searching for opportunities and alternatives. The success of citizen participation processes depends on how they are carried out. Our results suggest that the current group-based scenario-making and co-creation sessions often do not sufficiently address the heavy emotions involved in a state-led land use change process. Participation processes need to recognize the loss associated with land use transitions and avoid raising false expectations.

5.5.2.4 Expanding room for choice: Design alternatives

After buyouts are finalized, houses and other landscape elements may be completely demolished. However, protecting old trees and structures may help reduce the pain experienced when old land is unrecognizably reformed. One interviewee, for example, suggested retaining some elements or old stones from someone's old house and including those elements in the new house to be constructed. Monuments that help to remember or recognize certain locations can be valuable to those attached to the old landscape. For farmers, being able to keep a small part of the land if they wish may also help to retain a connection to both the land and the farmer identity. *"The fact that I still have some land makes me feel like I am still a farmer"* (Interview 14). Specific local alterations may be more costly compared to one-size-fits-all solutions, but they also help to acknowledge local attachments to land and support citizens' sense of control over their environment.

> *"One thing I am really sad about is the destruction of the landscape. I cannot follow […] why have they cut all the trees in the floodplain? I mean ok, ok, water storage, but do something about that, find alternatives. That seems so ruthless. It can be done better."* (Interview 15).

5.5.3 Differentiated public support

Providing differentiated support means looking at what each individual needs to secure valuable capabilities (ways of being and doing, in our case related to their livelihood, housing, and life project). Social, personal, and environmental conversion factors influence how people experience (in)voluntary relocation and land use change processes.

5.5.3.1 Recognizing diverse emotions

As mentioned earlier, the uncertainty associated with pending land use change and relocation projects greatly affects the citizens involved. For example, one interviewee recalled how someone once entered his land without permission to appraise the property's value. This was experienced as a threat and a sign of disrespect and remembered many years after. Similarly, citizens are frustrated by project managers who are not well prepared for meetings or who change job positions frequently and lose information. Interviewees also found it painful to be in a group setting when they were first confronted with a map that depicted their land transformed and water where their house is currently located.

Three interviewees said that, especially when emotions in an area are intense, it may be helpful to have more one-on-one kitchen table meetings instead of collective participation meetings, but only if sufficient information and clarity about government decisions is already available. Although kitchen table meetings are more time and resource intensive, spending additional time on individual cases can make a real difference in how people remember the process, which can improve their overall well-being. The same goes for providing aftercare by spending time on check-ins and evaluations after the project is finished.

5.5.3.2 Socioeconomic inequalities shape negotiating power

In the Netherlands, the areas selected for flood safety projects are not necessarily poor or marginalized, as is often the case in other water justice literature (J. F. Warner et al., 2020). Existing socioeconomic inequalities still matter, however, because they generate inequalities in political influence (being able to buy additional legal or technical support for example). The location of someone's land also greatly influences their negotiating power. One interviewee situated on the outskirts of a project area was affected by the land use changes but experienced less bargaining power because her land was not *needed* for the project to continue. Citizens just outside a project area also often experience negative impacts but have fewer opportunities to exert influence.

The division between landowners and tenants was also explicitly mentioned by interviewees. When describing inequalities within the community, interviewees mentioned that those who do not own land themselves are hit harder by a government decision because they receive less compensation to start anew in a different location. Moreover, due to land scarcity, there are few possibilities for farmers or business owners to continue their company in a different location close to their current home. Buyout programs by themselves do not redistribute wealth. For example, when a farmer has a high input value, such as a large farm with new barns, they receive more public compensation money than poorer farmers do.

> *"The few largest farmers resisted the plans the most, and they all got gigantic farms in return. That must have cost much more money than the small houses provided to the people who didn't have that much land and had less power to take their fight to the Council of State"*[3] (Interview 18).

Existing inequalities can also be reinforced within families. "*There are more people behind the owner being bought out. Family members, women, older relatives…the state only does business with the official landowner and distributive issues within the family are not documented"* (Interview 13). Moreover, interviewees reported that community members who were already dealing with mental health problems were often extra vulnerable to the stress of the relocation process.

5.5.3.3 Leveling political capabilities

For all interviewees, formal access to information, participation, and options to legal appeal were guaranteed in principle. In expropriation procedures, people are also entitled to public financial assistance to hire legal support (Rijkswaterstaat, 2022). Interviewees reported that this form of public support worked sufficiently, although there seemed to be differences in the quality of legal assistance and in people's ability to manage externally hired assistance well. Besides, citizens who appeal for a second time and bring a case to the Council of State are responsible for all legal fees if they lose. Thus, economic inequalities play a role: one interviewee mentioned hiring the best expropriation lawyer in the country, while others chose to defend themselves or not appeal at all because of the risk of high legal fees.

The time interviewees invested in formal state-led participation processes and in informal political lobbying was unpaid, and not everyone had the time and energy available to participate (or buy professional assistance). Interviewees emphasized the significant amounts of time and energy needed to proactively monitor government planning, become active in associations, or organize protests. Most interviewees said they had felt capable enough to defend their interests, but they had experienced time, knowledge, and funding constraints. Multiple interviewees also mentioned a learning curve: they became skilled in contacting politicians, drafting alternative plans, speaking to press, or organizing demonstrations. They mentioned the community cohesion and joy of working together with other citizens as reasons that they stayed active and continued trying to influence the decision-making.

3 The highest general administrative court in the Netherlands.

> *"It is valuable that we as a community supported each other and that we tried to do something against that measure [flood plain restoration and dike replacement], well, to make it less painful and that we did have influence, that we were able to steer how we as affected citizens and farmers came out of this"* (Interview 16, farmer expropriated and relocated to a different location in the same village).

Although one couple said they did not feel capable at all to stand their ground and kept stressing that it was them "against the professionals". When citizens perceived that their efforts to influence adaptation planning had little effect, some chose to disengage, preserve their energies, and stop using their political capabilities. Interviewees who felt misrecognized, not listened to, or overruled often also expressed statements about having low trust in the government or the information provided to them. A challenge with engaging citizens is that if expectations are not well managed or if people feel misrecognized, these experiences with a government body may spill over to other government projects in the area.

> *"And then you are confronted with a new government project in the same area. Well, for me, after all that [in the previous project] it was: No. I am not going to these sessions anymore. I do not believe... I have no more trust"* (Interview 13).

Next, we discuss the results of our capabilities-based assessment framework and draw lessons for future land use change processes.

5.6 Discussion

Our capabilities-based framework enables an actionable and complementary assessment attuned to current controversies about land use change in the Netherlands. We chose to bring in emotions explicitly because they help to point out what is of value to people and where injustices are experienced (Nussbaum, 2001; Roeser & Pesch, 2016). This interpretative empirical ethical study focused on subjective human experience, not just on matter-of-fact evaluations such as the number of opportunities for political influence, cost-benefit analysis, or the exact amount of financial compensation people received. Thus, we examined (1) valued ways of life, (2) expanding room for choice, and (3) options to provide differentiated public support. In this section, we draw general insights from the controversies studied to inform future research and adaptation practices. These lessons will need to be adapted to different contexts and will require further testing, but they can still inform scholars and practitioners working to realize just transitions in climate adaptation.

We begin with examining valued ways of life: practitioners cannot always know in advance what is of value to people, so it is important to thoroughly assess why people oppose certain measures and to try to find ways to protect capabilities or find suitable alternatives. When a land use change project is executed to benefit the rest of society, it seems justifiable to provide support for affected citizens to find alternative livelihoods or living arrangements that fit within their life goals, especially given that not all have similar access to other livelihoods that are acceptable to them. Moreover, providing sufficient room for citizens to influence the design and implementation of adaptations not only helps in gathering information about the valuable capabilities affected but also potentially reduces the emotional costs for the citizens involved.

When people are under stress, which they often are with a pending relocation process, all government interactions become charged with emotions and small details have lasting effects. People have different preferences in how they are treated by professionals, so diversifying the approach and creating more space for difficult emotions throughout the process can be helpful. Moreover, attention to cultural heritage and individual attachments to land in project design can soften the implementation of land use change. One example is taking alternative plans proposed by citizens seriously by providing the technical expertise to check their feasibility. Another example is to include small design changes to acknowledge peoples' attachment to their houses and land.

Ideally, taking additional time to understand someone's situation and provide differentiated public support to citizens should not have an instrumental objective such as convincing citizens or generating public acceptance. Providing that support should instead flow from recognizing and addressing the loss and hurt associated with land use transitions. Interviewees' narratives showed that, ultimately, citizens have to make an intrinsic move and decide for themselves to accept the new situation or not. Especially with state-led (in)voluntary relocation processes, recognizing the importance of room for choice and self-determination seems crucial. An internal decision-making process cannot and should not be forced.

Space for loss, mourning, and difficult conversations are important in a land use change process. Adaptation measures can have many benefits but also disadvantages for certain people living in the area. There will always be citizens who resist land use transformations and have a tough emotional time during and after the project. Some interviewees described a process of acceptance and letting go, of finding a new way to live in the situation. But, understandably, not all interviewees felt that way.

Administrators require training to handle the intense emotions of such a process both in one-on-one meetings and in group sessions. Interviewees explained that small differences in how project managers treat or engage with people can make a difference in their experience of the (in)voluntary relocation process. It also seems important that project evaluations for citizens not only focus on the success stories and good outcomes but also recognize the loss associated with land use transitions.

Paying attention to socioeconomic inequalities in relocation processes also appeared relevant. What socioeconomic inequalities are most salient differs from place to place, so identifying options for differentiated public support must be adapted to the specific context. In the Dutch case, the difference between owners and tenants, farm size, access to alternative livelihood options, and gender-related inequalities seemed most relevant. Moreover, the resources needed to lobby effectively are not equally distributed. Beyond the formal sphere of adaptation decision-making, informal lobbying and protesting form an important part of Dutch adaptation politics. Insight into local political dynamics is required to make strategic decisions about when to best try and influence a government plan, when to stop resisting, and when to lobby for second-best options in order to realize the most personal gains. While people with high political capabilities may not always be successful in exerting their will, they may be able to mobilize more government support to realize second-best alternatives such as the construction of their new house or permits for a different kind of company.

Importantly, trust in the government and having sufficient political capabilities are not necessarily related. Some interviewees with high political capabilities expressed distrust in the government: for example, talking about politicians lying, distrusting the justifications that were provided for adaptation measures, or not believing that policy officers were working for the common good. Interviewees also described being hurt when something they valued deeply was not protected by the government and apparently not valued in the same way by the majority of their fellow citizens.

Neither financial compensation nor providing sufficient opportunities for political influence can take away the hurt caused by land use transitions. When trust between citizens and the government body has become too low and non-workable, shifting to a different government body or working with a neutral facilitator may be helpful. Providing stable, future-proof and reliable long-term policies is an important factor as well. This allows people to know what they can expect and to start planning for the future. Clarity and honesty are important values in all parts of the process to avoid misunderstandings and to manage expectations.

Further research is needed to identify the best ways to integrate diverse attachments, room for choice, and differentiated support in land use change processes. Important conversion factors to consider in developing differentiated public support tools are socioeconomic inequalities and differences between people's values, characters, and goals in life. Different methods appeal to different people, so a diverse toolbox is needed to achieve just transitions in climate adaptation.

Lastly, our operationalization foregrounds specific aspects of land use conflicts such as human diversity, emotions, and the value of self-determination. Other relevant concerns to consider in a full assessment of justice in climate adaptation are the interests of non-humans and future generations, global and historic inequalities, scarcity of public funds, and the social and ecological benefits that contested climate adaptation measures can bring. Along with the aspects highlighted by our capabilities-based assessment, additional ethical perspectives and public deliberation is required to fully capture what is needed to achieve just climate adaptation.

5.7 Conclusion

We operationalized the capability approach to justice to assess (in)voluntary relocations and land use change processes in the Netherlands. Our capabilities-based assessment examined what was at stake for the citizens affected and how different values and preferred ways of life influenced their experiences. Moreover, we identified options to expand room for choice and provide differentiated public support. Our results emphasize the importance of paying attention to emotions and attachments in addition to financial compensation and formal opportunities to participate in or object to land use change.

When citizens have to deal with pending relocation plans, the uncertainty in the process and negotiations creates a true crisis in their lives. People are forced to question assumptions about their life projects and possibly change course due to an externally induced crisis. The loss and uncertainty citizens experience during state-led (in) voluntary land use change processes needs to be addressed by adaptation scholars and practitioners.

The strength of the CA is in identifying options for differentiated public support to improve the well-being of people affected by adaptation transitions. Capability-based assessments require empirical engagement and need to be adapted to specific contexts. Complementary assessments are also needed to capture the full breadth of justice aspects in climate adaptation. Nevertheless, the experiences with (in)voluntary land use change reported in this study can help to inform and realize just transitions in local climate adaptation.

Chapter 6

Conclusions

6. Conclusions

The chapters discussed in this dissertation present factors that need to be taken into account when trying to integrate justice in climate adaptation and long-term water management. More specifically, this thesis identified ways to advance justice in controversies about state-led (in)voluntary relocations and land use change conflicts, building upon the capability approach to justice (CA). In this concluding chapter, I summarize the answers to the sub-questions in Chapters 2–5, explain their interrelations, and answer the main driving research question behind this thesis. Subsequently, I will discuss the limits of this study, describe avenues for future research, and critically reflect upon the construction of interdisciplinary research.

6.1 Conclusion chapter two

In this chapter, the research question addressed was: *To what extent do the spatial and temporal scales of planning methods affect which justice claims are taken up in the planning process? (RQ1).* In the Manila Bay case, Dutch and Philippine consultants were conducting a high-level and long-term master planning process with the explicit aim to create an inclusive and participatory process. However, the planning process did not create equal opportunities for all actors to have their views taken up in the plan. This was partially due to how the pre-conceived problem statement and planning scope were defined. Scalar politics shaped this adaptation planning process because scale framing in the planning process functioned to legitimize the contested displacement of informal settlements by pointing to economic development, disaster risk reduction, or environmental protection. Planning design choices involving scalar out-zooming enabled the uptake of these justice claims while they backgrounded the justice claims of negatively affected groups: namely, the urban poor and small-scale fishing communities. As we saw in the Manila Bay case, scalar political struggles are embedded in and influenced by the political-historical and economic context. That is why when planning methods are exported to a different planning context, caution is needed to avoid unintended negative consequences for already disadvantaged groups.

The point of this chapter was not to argue against the use of long-term planning methods. The depoliticizing effects of scalar politics do not always (dis)advantage the same actor groups. Scalar politics can work in multiple directions. In many adaptation controversies, multiple competing justice claims are present that each make use of different temporal scale frames. For example, in the Dutch Delta, nature organizations draw attention to the long lifespan of rivers and how rivers used to be freely meandering centuries ago. Meanwhile, farmers refer to the generational heritage of their farms to strengthen their claim to the land and protect the polders that were reclaimed from the sea. Pleas to expand the scope of justice to include future generations or disadvantaged communities at the global level can also be seen as an instance of scalar politics. Long-term planning is absolutely critical, not only regarding the climate crisis, but also considering the many other environmental issues for which action is often long overdue. However, power-sensitive long-term adaptation planning helps to avoid depoliticizing scalar political dynamics that reinforce existing inequalities. Power-sensitive adaptation planning needs to include an understanding of the different temporal and spatial dimensions of climate adaptation and the associated scalar political dynamics. When certain solutions are framed as inevitable and other problems as out-of-scope or as marginal issues, scale frames can have depoliticizing effects. How scalar political dynamics play out and which perspectives are marginalized will vary on a case-by-case basis. Nevertheless, as this chapter showed, critical scrutiny of the scale-sensitivity of justice claims and the fora in which these justice claims are negotiated is essential.

6.2 Conclusion chapter three

This chapter was titled *Continuous Negotiation in Climate Adaptation* because of two specific characteristics regarding questions of justice in climate adaptation: co-evolution and disagreement. The research question was: *How can the co-evolving nature of socio-ecological systems be accounted for in climate adaptation justice? (RQ2)*. Socio-ecological systems are not static, and climate change intensifies any changes. That means that even if a social equilibrium and agreement has been reached, natural hazards,[1] social developments, or unintended consequences of human engineering may destabilize hard-won compromises. There is no single historical socio-ecological system state that climate adaptation measures should necessarily help an area return to. As long as the limits to adaptation have not been reached, climate adaptation measures can sustain current socio-ecological systems. However, climate adaptation measures could also transform socio-ecological systems and create new functions – or retrieve old functions that were lost by previous land use changes.[2]

Considering the co-evolutionary nature of dynamic socio-ecological systems, a promising way forward is to turn toward procedural justice. How can adaptation conflicts and continuous negotiations be settled in a fair manner? For a capabilities-based understanding of procedural justice specifically, the challenge of co-evolution implies the following two guidelines. First, in order to work with Holland's (2008b, 2012) meta-capability Sustainable Ecological Capacity in local climate adaptation, the CA needs to account for the fact that different actors prefer different kinds of ecosystem states. The Haringvliet Dam-opening controversy illustrated that different conceptions of 'nature' and preferences for different types of socio-ecological systems (i.e., fresh water or saline water) shape debates about appropriate adaptation measures in the Dutch Delta.

1 Science and technology studies scholars, most famously Latour (2017), show that the categories 'nature' and 'humans' are not so separate, despite how we often talk about them in everyday language. The artificial distinction between 'natural' hazards and 'social' developments or between 'farmland' and 'nature' is harmful in finding viable sustainable solutions. Nevertheless, constructing 'nature' as an epistemic category may be helpful as a political strategy in specific situations.

2 To elicit the normative nature of climate adaptation, this chapter described how multiple socio-ecological system states are possible and justifiable. It also referred to an example involving different kinds of biodiversity at different spatial scales: fresh water systems with more species at the local level and brackish water systems with fewer but more rare species at the global level. I used this example merely to emphasize the normative dimensions of climate adaptation, but do not mean to suggest that biodiversity is not valuable. Rivers and ecosystems always transgress political-administrative boundaries, and there is real intrinsic and instrumental value in protecting as many species as possible at the global level.

Second, approaches to advance procedural justice need to accept that climate adaptation is a never-ending process, subject to unintended consequences, deep uncertainty, and many socio-ecological system changes over time. Rights-based approaches to environmental law and policy have difficulty incorporating the inherent dynamism of socio-ecological systems in legislation. Instead, we need to anticipate, prepare for, and best deal with continuous destabilization and re-negotiations about how to use land and water. Focusing on human agency and political capabilities over rights-based approaches may therefore be justified. Ensuring a condition of political equality may remedy the issue that not all actors have equal influence in adaptation politics. The associated concept of political capabilities, first applied to climate adaptation by Holland (2017), was further investigated and tested in Chapters 4 and 5.

6.3 Conclusion chapter four

Conceptualizations of procedural justice are often based on rights-based or principle-based approaches in FRM and climate adaptation literature. However, a literature review of FRM conflicts, particularly regarding involuntary relocations, revealed that focusing on social outcomes and political agency instead of rights-on-paper is important. This chapter therefore answered the question: *What is the potential of the political capabilities concept to address justice in flood risk management? (RQ3)*

The CA focuses on social outcomes. Thus, instead of only resorting to legal checklists or procedural steps, it focuses on the unequal outcomes that may be created and on people's real capabilities to influence adaptation planning. Moreover, it recognizes that people's political capabilities are shaped within a web of uneven power relations and existing inequalities. The CA is therefore able to integrate multiple patterns of socio-economic inequalities, social misrecognition, socio-economic inequalities, and cultural marginalization through context-sensitive conversion factors. These conversion factors influence an individual's political capabilities, that is, their ability to influence adaptation politics and have political control over their environment.

Recognizing the intrinsic value of 'the process of choice' and of having sufficient political control over one's environment is also critical in FRM, especially considering the hurt associated with involuntary relocations. The right to self-determination and the intrinsic value of freedom of choice are fundamental to the CA. Sufficient political capabilities should be guaranteed to achieve justice in climate adaptation.

This chapter also explained why, when it comes to political capability, both lower thresholds (Holland, 2017) and upper ceilings need to be secured. Political capability ceilings can potentially level the playing field when FRM exposure reduction measures are implemented. It is not enough to only secure the threshold for marginalized communities. As descriptions of FRM controversies show, too often 'powerful' local stakeholders block measures that are good for non-humans, future generations, or other actors with fewer political capabilities.

6.4 Conclusion chapter five

In this chapter, the CA was operationalized and applied as a normative assessment framework. The corresponding research question was: *What does a capabilities-based evaluation of state-led (in)voluntary relocations and land use change conflicts in the Dutch Delta reveal about experienced injustice? (RQ4)*. After an iterative process between interview results and reading capabilities literature, I developed a capabilities-based framework that features three core interrelated questions: 'What is a valuable way of life for this person?', 'Can the room for choice be expanded?', and 'What are the options for providing differentiated public support?'. These questions may lead to different results in different contexts. This context-sensitive capabilities-based assessment framework leaves room for human diversity, addresses inequalities in informal lobbying practices, and integrates non-monetary values in assessments of justice, such as the uncertainties that citizens face during long land use change processes. The chapter also discussed options for providing differentiated public support to reduce inequalities and stressed the need to better recognize the range of attachments and emotions people experience when their living environment changes. Identifying options to provide differentiated public support means adjusting generic policy instruments to individual needs, which can help to achieve just adaptation outcomes. The (in)voluntary relocation processes studied often had severe emotional impact on the citizens affected. Including small ways of acknowledging the value of self-determination in the process can make a difference and improve the process. Some examples are re-building with old artifacts, spending resources on recognizing people's heritage, and protecting landscape values, as well as asking people how they want to pursue their 'life project' in the future once their living environment has been transformed.

Lastly, trying to understand the values at stake behind a certain livelihood or attachment to a place can help to identify acceptable alternatives within ecological boundaries. Concerns about losing a 'way of life' should not be dismissed as 'backward' or 'traditionalist' or greedy (for example, stating that farmers are only out for economic gain). Land and livelihood are very important for people's identity formation and wellbeing. If someone's life project is sustaining the farm that has been in their family for multiple generations, citizens and adaptation practitioners may work together to find a way for that person to choose and realize a related life project that is valuable in their eyes, though in a new location or with different means. Providing differentiated public support seems justified in such life-changing adaptation transitions that are implemented to reap benefits for the general public.

6.5 **Overview:** Securing sufficient political capabilities

Figure 6 provides a schematic overview showing the interrelations between the research questions (RQ 1–RQ 4) addressed in the chapters. The people in the middle represent the politics of climate adaptation in which different actors converse about their disagreements and diverging approaches to climate adaptation. Political capabilities, defined as the ability to influence adaptation decision-making, is a key concept in this dissertation. The focus on political capabilities is explainable by the inherent political nature of climate adaptation, the presence of competing justice claims, and the need to focus on human agency. In line with a sufficientarian and limitarian interpretation of the CA, both a lower threshold and upper ceiling need to be established.

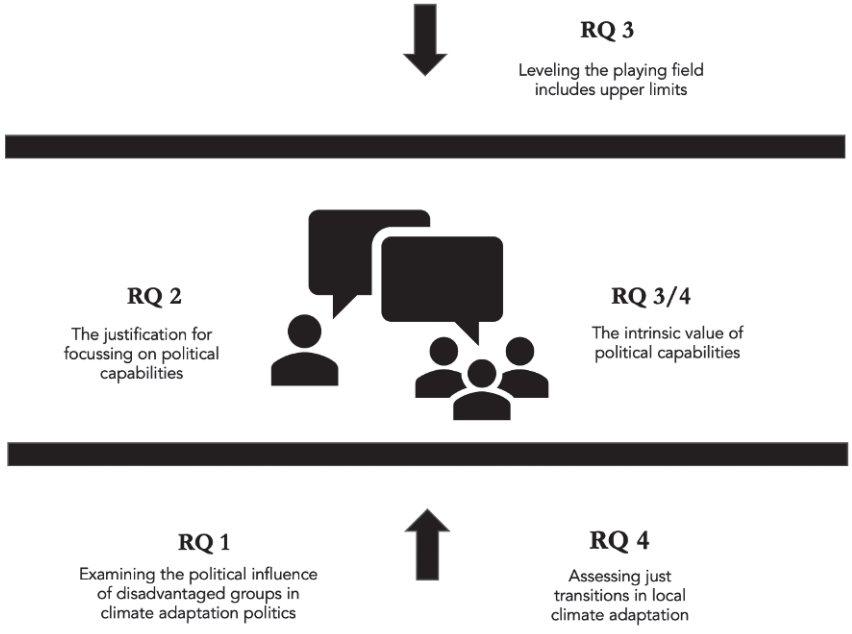

Figure 6. Schematic overview of the connections between research questions: Securing sufficient political capabilities

Chapter 2 (RQ1) illustrates the necessity of providing a minimum threshold of real opportunities for political influence (i.e., political capabilities) for all actors affected. Political inequalities may result in adaptation planning that reinforces existing inequalities. Advocates of transformative adaptation options that challenge the status quo can be impeded by scalar political dynamics. Chapter 3 (RQ2)

focuses on procedural justice and specifically political capabilities. The salience of guaranteeing the condition of political equality is justified by explaining the co-evolving nature of socio-ecological systems using science and technology studies literature.

The core of Figure 6, the discussing or negotiating icons, represents the intrinsic value of the 'sufficient political capabilities' concept. Securing political capabilities has intrinsic value for a number of reasons (discussed in Chapter 4 (RQ3) and Chapter 5 (RQ4)). The right to self-determination is important for understanding what is at stake in the politics of climate adaptation, especially in the case of involuntary relocations. Nussbaum (2011) described political capabilities as 'having political control over one's environment.' Although full control is not possible and probably not even desirable, as climate adaptation is fraught with deep uncertainties and co-evolving systems, the political capabilities concept draws attention to the contributions of being able to stand up for oneself and of being able to shape our lives to increase human wellbeing. Furthermore, leveling the playing field in terms of people's political capabilities is important for reducing inequalities in political influence and adaptation outcomes.

The necessity for an upper ceiling to political capabilities is explained in Chapter 4 (RQ3). As will be elaborated in Section 6.7.2 more research into limitarianism is needed to establish the exact limits and to find ways to implement these philosophical ideas. Nevertheless, Chapter 2 (RQ1) shows the need for understanding and addressing local political dynamics in order to develop a power-sensitive and contextually embedded ethics of climate adaptation. Applying tools or implementing concepts, including the CA, can reap very different results in different institutional contexts.

6.6 Answering the overarching research question

The main research question of this dissertation was how to integrate competing justice claims in long-term water management and climate adaptation. Combining empirical qualitative research with philosophy and ethics, this research pointed toward several key concepts to integrate in the ethics of climate adaptation: scalar politics and power-sensitive adaptation planning, co-evolving socio-ecological systems, inequalities in political influence, and the relevance of having sufficient political control over one's environment in local adaptation ethics.

Each chapter showed why justice is a plural and contested concept and why that is relevant for investigating competing justice claims in a specific adaptation controversy. Moreover, because justice claims are scale sensitive, it is necessary to carefully consider how the design of the planning or decision-making forum affects which kinds of justice claims are integrated more easily than others (chapter 2). To understand justice in climate adaptation politics, historical path dependencies, uncertainty, and thus the co-evolutionary nature of socio-ecological systems are relevant factors as well (chapter 3). Recognizing that citizen's loss and pain is a part of adaptation transitions is also vital in realizing just adaptation transitions.

Adaptation ethics also needs to be sensitive to power asymmetries and most notably to inequalities in political influence (chapters 3 and 4). The political capabilities concept is one way to conceptualize these inequalities and operationalize policy recommendations in order to level out political capabilities (chapters 3–5). However, recommendations flowing from the CA are not restricted to political capabilities only. Political capabilities are fertile functionings, so they are possibly fruitful avenues to redirect attention toward. Yet, recognizing the intrinsic value of self-determination and other core capabilities is important as well, especially in the case of involuntary relocations (chapters 4 and 5). Chapter 5 showed that the CA does not only encompass 'political capabilities' but also provides a broader understanding of human wellbeing. In order to achieve just adaptation transitions, considerations of human diversity, emotions, and attachments are relevant for both actors who have too many political capabilities and actors who have too few.

Furthermore, this dissertation revealed that determining whether adaptation researchers and practitioners should focus on securing a lower threshold or establishing an upper limit, or both, varies depending on the specific needs and details of the local adaptation controversy. The notion of leveling political capabilities may be helpful in prioritizing policy measures and research attention in a specific context. The dynamics

of adaptation politics differ on a case-by-case basis. They need to be taken into account when deciding whether most resources should be spent on securing a lower threshold (guaranteeing sufficient political capabilities for disadvantaged communities) or on establishing limits or capability ceilings (preventing certain actors from dominating adaptation politics and, in the process, disadvantaging others). This dissertation discussed cases in the Netherlands and the Philippines. In the Philippines, securing the lower threshold of political capabilities seemed a first priority, whereas in the Netherlands, the political-institutional setting is different. The political rights of disadvantaged groups are better protected in the Netherlands and strong lobbies of vested interests tend to prevent transformative adaptation from occurring at all (some people even refer to the Netherlands as a '*lobbycratie*' (Follow The Money, 2023)).

In sum, all four research chapters showed the relevance of taking empirical research seriously in philosophy and climate ethics. Theory needs to be empirically grounded, tested, and refined. Case study lessons can inform the traditional philosophical academic world, which, in its quest for 'analytical clarity,' often operates in a manner that is quite detached from the contextualized empirical messiness. The CA is promising in this aspect, although only a few empirical applications exist in the climate adaptation domain besides studies signaling the suitability of this approach for adaptation ethics. As described in the previous section, this dissertation critically examined the possibilities and limits of the CA for climate adaptation ethics, specifically land use change conflicts and (in)voluntary relocations at the local level. The theoretical insights it produced are relevant for all scholars working with the capability approach and with climate adaptation ethics in general.

6.7 Discussion

This dissertation searched for ways to advance justice in climate adaptation and long-term water management and, in that search, focused on those losing out in adaptation transitions. The following sections provide a critical discussion of this research approach and sketch directions for future research.

6.7.1 Research limitations

A capabilities-based framework foregrounds certain salient factors to include in adaptation ethics, but it pays less attention to other dimensions that may also be relevant for research into climate adaptation justice. This dissertation focused specifically on exposure reduction measures, land use change conflicts, and (in)voluntary relocations of humans, and the more anthropocentric capability approach showed itself to be a useful framework. As stated many times before, however, the facets of justice foregrounded in this dissertation are not all that is of importance for understanding justice in climate adaptation. The CA is intended to be a complementary framework to inform adaptation ethics (Alkire, 2005; Cañizares Gaztelu, 2023; Robeyns, 2017). A plurality of approaches and methods helps to identify blind spots and scrutinize legitimizing narratives.

Although the local and global levels in climate adaptation are inherently connected (Gupta et al., 2013), this research focused on controversies *within* countries at the local level. This level matched best with the context-sensitive approach used in this dissertation to research involuntary state-led planned relocation. Questions of global adaptation justice are relevant to consider as well, but they were beyond the scope of this dissertation. Future research could further examine the connections between local and global climate adaptation politics and how these also affect local adaptation controversies.

With the exception of the second chapter, which employed a politics of expert knowledge perspective and studied the MBSDMP planning process in the Philippines, the majority of this dissertation focused on just adaptation transitions at the local level in the Dutch Delta, with specific attention given to state-led (in)involuntary relocations and land use change conflicts. In the Netherlands, the ongoing nitrogen controversy, associated distrust in the government, and opposition against climate and nature measures warrant thorough investigation of the emotions and experienced injustices that are part of these controversies. Trade-offs are unavoidable, but to realize a just transition, it is important to have a clear picture of what is at stake and for whom. This dissertation hopefully contributes to the aim of achieving just transitions in climate adaptation in the Netherlands and beyond.

To further develop and test the political capabilities concept, however, more studies are needed in a wide range of geographies. The choice for a specific operationalization of the CA and whether capabilities-based frameworks are best for addressing climate adaptation ethics can vary by case. Academic research is ideally a collaborative effort, one in which scholars situated in different geographies are in conversation with each other (see also Section 6.8). An example of an important book for the continued conversation about 'Brackish Waters' is *Misreading the Bengal Delta* (Dewan, 2021). Dewan (2021) describes the historical socio-technical development of polders in Bangladesh and discusses the political contestations around climate adaptation and fresh versus saline water socio-ecological systems. The politics of climate adaptation are situated in historical-contexts and influenced by historical patterns of injustice. Thus, a context- and power-sensitive approach to climate adaptation ethics is essential. Throughout this dissertation, I aimed to understand how contextual differences, existing inequalities at the local and global levels, and broader patterns of misrecognition influence how inequalities between peoples' political capabilities are addressed in specific contexts.

6.7.2 Discussion: Future research directions

This dissertation does not yet specify what an upper limit, or ceiling, to political capabilities should look like to level political capabilities. Future research is needed into *how* to level the playing field with regard to political capabilities in adaptation politics. Fruitful directions that would include ecological limits are the earth system justice framework and sharing the ecospace (Gupta et al., 2023), avoiding maladaptation (Juhola et al., 2016; Schipper, 2020), research into planetary boundaries and planetary justice (Biermann & Kalfagianni, 2020; Hickey & Robeyns, 2020), new developments in limitarianism (Robeyns, 2022; Timmer, 2021), and efforts to integrate natural limits in political philosophy (Cannavò, 2021). Holland's research also remains an important starting point for including natural limits and future generations in the CA (Holland, 2008a, 2014, 2022).

As with trying to establish limits in socio-ecological systems, establishing limits to political capabilities needs to occur in a context- and power-sensitive manner. The background conditions influencing people's political capabilities (i.e., the larger socio-economic inequalities in society) also need to be addressed. Ideally, transformative climate adaptation does not reinforce existing inequalities and potentially even helps to mitigate these inequalities. To this end, it may be helpful to focus public support on removing corrosive disadvantages (such as homelessness and psychological stress, which are likely to spread to other areas) and supporting fertile functionings (such as community cohesion, livelihoods and political participation) (Wolff & De-Shalit, 2007, pp. 140–141, 2011). Political capability is a fertile functioning since it helps to

realize and advocate for other capabilities and values. Political capability is the ability to effectively influence adaptation decision-making and exert sufficient political control over one's environment (Holland, 2017). Wolff and De-Shalit (2007) justify prioritizing spending public resources on fertile functionings because these multiply and create more capabilities.

Adaptation practitioners can help to identify relevant fertile functionings and feasible options for providing differentiated support in a specific context. Analyzing the inequalities in individual capabilities and providing differentiated public support is information and resource intensive. It is important to acknowledge multiple dimensions of social inequality and contextual differences in a capabilities-based analysis, but practitioners often struggle with limited time and resources. Yet, paying even a bit more attention to these factors and understanding that procedural justice is more than just formal participation and legal procedures can help strengthen justice in climate adaptation. In any case, collaboration and exchange between adaptation practice and academic research is essential.

Another direction for future research is delving into the psychology of loss in adaptation transitions and the connections between conflict resolution, trust, flexibility, and resilience. The instrumental value of having sufficient political capabilities is that political influence helps people to realize their version of the good life. The capability of political control over one's environment also has intrinsic value as it is related to attachment to land, psychological safety, and having the political agency to stand up for oneself. There are deeper layers to this aspect of adaptation justice that should be explored. Promising directions can be found, for instance, in the work of sociologist Arlie Russel Hochschild (2018), who unveiled mechanisms that create distrust and anti-government sentiments and described the role of emotions in US politics. In a different field, Susan Brison (2002) explained how real-life experiences can inform philosophical theory and described how identity formation and one's sense of being in the world changes after traumatic events. And Siri Eriksen, known for multiple publications about the politics of climate adaptation and climate vulnerability, recently wrote a piece about vulnerability as a shared human condition: "A more compassionate type of [climate adaptation] research is urgently required; that is, one that goes beyond the material and political dimensions to investigate the deeply personal" (Eriksen, 2022, p. 1279). Finally, Robin Wall Kimmerer (2020) and Arturo Escobar (2020) brought in indigenous perspectives to the question of how we can flourish collectively in this climate-changing world.

6.8 **Reflection:** Academic research as a continuous conversation

Practicing research means never assuming final answers have been reached and always being open to changing your mind. Following Donna Haraway (1988), the research approach in this dissertation builds on the understanding that science is a continuous conversation between a multiplicity of holders of situated knowledge. True objectivity is achieved by acknowledging the multiplicity of situated knowledges and organizing a qualitative review (i.e., a conversation process). It is a continuous testing of assumptions, an actively reaching out to alternative visions. Another science and technology scholar, Wiebe Bijker (2017, 2019), explains that science is not just 'any opinion' exactly because of the sophisticated institutionalized scientific process that organizes critique and the exchange of positions through various review processes.

The situatedness of a researcher, a situatedness that ranges from their geographic location to their previous education and life experiences, influences the research questions asked (Haraway, 1988). That is why, in the ideal world, doing academics is a continuous critical conversation between a diverse as possible body of scientists (Zwarteveen, 2015). And this conversation must follow certain institutionalized rules to guarantee quality and thoroughness, with or without special additional observational tools and conceptual or mathematical models to support analysis (Kofman, 2018; Latour & Woolgar, 1986).

In this interdisciplinary PhD project, various conceptual lenses and methods were used to illuminate part of the kaleidoscopic question of how to integrate 'justice' into climate adaptation and long-term water management. The question is kaleidoscopic because multiple facets of justice are important to understand the whole. Yet, sometimes, to find answers, it is necessary to draw artificial boundaries around a research subject and delineate a research question. In the process, specific open-ended questions need to be 'bracketed' (i.e., used as an assumption in the moment but to be re-examined and opened at a later time). It is not possible to open and question all assumptions behind a research project or controversy at the same time. Focusing research attention on a specific level of analysis or a specific problem can help to find a piece of the puzzle. An individual research project is like a meandering river, complete with oxbows that represent deserted ideas, and the next research question often flows out of the previous one that was just answered. Research interests and thematic emphases shift as the research progresses. In the end, all the individual research pieces need to be added to the puzzle of the larger scientific project, a pluralistic, collective, and co-evolving project that all humans practicing academic research contribute to in one way or another (Goddard et al., 2019; James, 1909).

The bracketing of assumptions was a useful technique in this research. For example, although the question of whether an adaptation measure was necessary or not was relevant throughout this dissertation, it needed to be temporarily closed in chapter five in order to focus on another sub-question. Namely, what would be needed to achieve a just adaptation transition, *if these exposure reduction measures were necessary?* The question about the contested necessity of adaptation projects was discussed in previous chapters. Another example is the philosophical debate about anthropocentrism versus ecocentrism. This debate is relevant for the main question behind this dissertation, but it was only actively engaged with in chapter three and was bracketed in other chapters, where different parts of the kaleidoscopic 'justice' in climate adaptation were investigated.

The ecocentrism-anthropocentrism dichotomy also shows the relevance of procedural justice. Climate adaptation in flood risk management can have multiple faces. On the one hand, climate adaptation can be about trying to control and stabilize the environment enough to continue current land use practices despite increased climate variability. On the other hand, climate adaptation can also be about fostering a more flexible, caring, and dynamic relation between humans and nature (Stirling, 2020). These competing views are part of the human politics concerning the future direction of water systems and the selection of flood risk measures.

Choosing a specific kind of climate adaptation measure and subsequent trade-offs needs to be dealt with politically, so securing political equality is key. Yet, humans currently dominate climate adaptation politics. There are, however, innovations that include non-human actors in human politics (Dryzek & Pickering, 2018a; Latour, 2017), such as The Embassy of the North Sea (Parliament of Things, 2020), Chair of the Future (Watson et al., 2020), granting rights to rivers (O'donnell & Talbot-Jones, 2018), giving political agency to wetlands and animals (Della Bosca & Gillespie, 2020; Meijer, 2019), focusing on socio-natural struggles over common 'riverhoods' (Boelens et al., 2022), and shifting to a more 'caring' approach to water management (Domínguez-Guzmán et al., 2022; Stirling, 2020). Future research should investigate whether these innovations are able to guarantee that non-humans, ecological thinking, and future generations are given equal consideration in climate adaptation decision-making.

True ecocentric thinking implies a different language and conception of our world as it is shared with other beings (Kimmerer, 2020). Yet, sometimes, when acting in a politically strategic manner, it is necessary to simplify and draw boundaries about something called 'Nature.' This is not because things are really so black and white, but because vague boundaries and focusing on all that is dynamic can be unhelpful in

protecting what is of value. There is a time and space for exploring new ways of thought, and there is a time and space for matching your language to the language of current systems. What is important is to be able to think outside of current systems and to link old and new systems of thought together. Standards are needed to protect valuable ecosystems and to share our eco-space in an equitable manner (Gupta et al., 2023). At the same time, definitions are often not as definite as they seem and transition zones are fiercely negotiated. For me, 'Brackish Waters' represents the ability to handle that kind of ambiguity. An ambiguity that is an inherent part of climate adaptation politics.

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Summary

Summary

Brackish waters can be found in transition zones between freshwater rivers and saltier seas. These dynamic coastal landscapes harbor multiple functions such as housing, agriculture, nature, and industry. Because of climate change, existing borders between fresh and saline water - and between land and water - are becoming contested. Extreme rainfall, typhoons, heat waves, and droughts occur more frequently and are expected to intensify. Shifting water levels and chloride concentrations affect which livelihoods and land use practices can be sustained in the future.

Land use transformations may be needed to adapt to climate hazards such as flooding, drought, and sea-level rise. Climate risks can be reduced when people or infrastructures are moved out of areas exposed to climate hazards. Examples of these so-called exposure reduction measures are zoning, managed retreat, buy-outs, the elevation of the water table in agricultural land or projects such as the Dutch Room for the River program. However, land use changes are often contested by the people currently living and working on those lands.

Ethics can provide insights into such tough choices. Win-win solutions and no-regret options sound nice, but often the impact of a measure is: 1+1 = 3 - 1. A measure can reap positive effects, but who bears which loss? A society needs to examine which places and people are negatively affected and find ways to address the losses that are part of transitions. Justice is an important concept in land use transformations, because climate adaptation touches upon the (re)distribution of public goods and political control about land use. Making tough choices explicit and creating more equal access to political influence for all types of stakeholders contributes to justice in climate adaptation policy.

This research focuses on questions of justice in controversies about land use change and (in)voluntary relocations in the name of climate adaptation. People often fundamentally disagree about whether current land use practices and ways of life should be sustained or transformed by climate adaptation measures. These are normative questions about how to flourish collectively in landscapes affected by climate change. The overall objective of this research is to integrate the contested concept of justice in climate adaptation and long-term water management. Because we can anticipate more conflicts about exposure reduction measures in the future, it is also necessary to examine what just climate adaptation transitions could look like at the local level. Not only in theory, but also by speaking with the people affected by climate adaptation measures.

Each chapter in this dissertation presents factors to consider when integrating the contested concept of justice in climate adaptation and long-term water management. The capability approach to justice also plays a central role: this is an approach in ethics that primarily looks at the real options or 'capabilities' different people have available. In this dissertation, I examine how the capability approach can be used to assess justice in climate adaptation. One advantage of the capability approach is that it is flexible and easily adaptable to different contexts. Even though many scholars mention the capability approach as a suitable ethical perspective in climate adaptation, there are only a few fleshed-out operationalizations available. In response, this dissertation presents an operationalization specifically for conflicts about land use change and critically reflects upon the possibilities and limitations of the capability approach to justice as a complementary approach in adaptation ethics (Chapters 3–5).

This dissertation is grounded in the assumption that justice research should start from empirical controversies and prioritize learning from the people who experience injustices, instead of relying only on theorizing and stylized situations. In water management and climate adaptation policy, embracing lived experiences is critical for finding solutions that work within a particular historical and political context. Hence, this empirical ethical study strongly builds upon qualitative research methods such as interviews, ethnographic observations, and document analysis to inform the ethics of climate adaptation.

As we can see in the case of the Manila Bay Sustainable Development Master Plan (Chapter 2), adaptation planning design choices that involve scalar out-zooming can enable the backgrounding of justice claims expressed by urban poor and small-scale fishing communities. Because justice claims are scale-sensitive, it is necessary to carefully consider how the design of planning or decision-making fora affects which kinds of justice claims are integrated more easily than others. Scalar political struggles are embedded in and influenced by the political-historical and economic context. That is why, when planning methods are exported to a different planning context, caution is needed to avoid unintended negative consequences for already disadvantaged groups. Power-sensitive adaptation planning needs to include an understanding of the different temporal and spatial dimensions of climate adaptation and the associated scalar political dynamics.

Rights-based approaches to environmental law and policy have difficulties incorporating the inherent dynamism of socio-ecological systems in legislation. Within the capability approach, the meta-capability Sustainable Ecological Capacity is developed to better integrate environmental protections and intends to draw substantial ecological limits. The Haringvliet case regarding salinization in the Dutch Southwest Delta (Chapter 3),

however, illustrates that at the local level, there is no single historical socio-ecological system state that climate adaptation measures should necessarily help an area return to. The Haringvliet is a former estuary turned freshwater lake, and people hold different views about its most desirable socio-ecological system state. Future shifts in the socio-ecological system, such as decreased freshwater availability and sea-level rise, are expected to upend today's compromise about chloride levels in the Haringvliet. This suggests that anticipatory water management should not only address climate impacts but also account for co-evolutionary dynamics and prepare for re-negotiations of established ecological thresholds. Hence, it is critical to integrate procedural justice and attention to political inequalities in capabilities-based adaptation justice frameworks.

Formulating conditions to secure political equality may remedy the issue that not all actors have equal influence in adaptation politics. People's political capabilities are shaped within a web of uneven power relations and existing inequalities. The capability approach to justice integrates multiple patterns of socio-economic inequalities and cultural misrecognitions as they manifest in different contexts through context-sensitive conversion factors. As the descriptions of flood risk management controversies show (Chapter 4), powerful local stakeholders frequently block measures that are good for non-humans, future generations, or other actors with fewer political capabilities. In flood risk management and climate adaptation literature, procedural justice is often conceptualized on the basis of rights or principles. Yet, it is important to look beyond rights-on-paper and examine social outcomes. Social, personal and environmental conversion factors mediate people's political capabilities to transform legal rights into real political agency and influence.

The instrumental value of striving toward sufficient political capabilities for all is that political influence helps people to realize other valuable capabilities and their version of the good life. However, the capability 'political control over one's environment' also has intrinsic value because it is related to attachment to land, psychological safety, and having the political agency to stand up for oneself. Recognizing the intrinsic value of self-determination and other core capabilities is also relevant, especially in the case of (in)voluntary relocations (Chapter 4). The capability approach to justice has a broader scope than only securing sufficient political capabilities and improving political equality to advance justice in climate adaptation.

In order to achieve just adaptation transitions, considering factors such as human diversity, emotions, and attachments is as relevant for actors who have many political capabilities as it is for actors who have fewer political capabilities. These factors are reflected in the capabilities-based evaluation of land use change controversies,

especially (in)voluntary relocations, presented in Chapter 5. This operationalization of the capability approach to justice is based on three core interrelated questions: 'What is a valuable way of life for this person?', 'Can the room for choice be expanded?', 'And what are the options for providing differentiated public support?'. Using a context-sensitive capabilities-based assessment leaves room for human diversity, addresses inequalities in informal lobbying practices, and integrates non-monetary values in assessments of justice, such as the uncertainties that citizens face during land use change processes that take a long time.

This dissertation also discusses options for differentiated public support that reduce inequalities and stress the need to better recognize the range of attachments and emotions people experience when their living environment changes (Chapter 5). Providing differentiated public support seems justified when such life-changing adaptation transitions are implemented for public benefit. Recognizing actors' experiences of loss and pain that are a part of adaptation transitions is vital for realizing just adaptation transitions. Moreover, the notion of leveling political capabilities may be helpful in prioritizing policy measures and research attention in a specific context. Whether adaptation researchers and practitioners should prioritize securing the lower threshold, establishing an upper limit, or both, varies depending on the specific needs and details of the local adaptation controversy.

A point of discussion is that a capabilities-based framework foregrounds certain salient factors to include in adaptation ethics while paying less attention to other dimensions that are also relevant for research into climate adaptation ethics. This dissertation focused specifically on exposure reduction measures, land use change conflicts, and (in)voluntary state-led planned relocations of humans at the local level. The strong focus on people's lived experience at the local level led to less attention to other relevant aspects of justice such as global climate justice, utilitarian concerns and ecocentric perspectives (see also the discussion in Chapter 6). There are more facets of justice relevant for understanding justice in climate adaptation. Hence, the capability approach to justice is intended to provide complementary assessments that can inform adaptation ethics. For example, it can be used in addition to frameworks such as the widely used utilitarian cost-benefit analysis. A plurality of approaches and methods helps identify blind spots and scrutinize legitimizing narratives.

All in all, this dissertation aims to contribute to the debate about just transitions in climate adaptation and land use transitions in the Netherlands and beyond. Anticipating climate risk also means anticipating conflicts about what to protect and what to let go. Not everyone will agree about the necessity of these adaptation measures

nor about what 'just' climate adaptation actually means at the local level. This research therefore describes the prevalence of competing justice claims in multiple adaptation controversies. At the same time, this dissertation further develops a capabilities-based approach to climate adaptation ethics.

Samenvatting

Samenvatting

Brakke wateren zien we vooral in delta's, waar zee en rivier in elkaar overgaan. Het zijn vaak zeer dynamische landschappen met groot belang voor zowel de natuur als de maatschappij. Wij mensen willen veel tegelijk in die delta's: wonen, werken, landbouw, recreatie en ander landgebruik. Door klimaatverandering komen bestaande evenwichten tussen zoet en zout water - en die tussen land en water – steeds meer onder druk te staan. Extreme regenval, stormen, hittegolven en droogte komen vaker voor en zullen naar verwachting verergeren. Verandering in waterpeil en zoutconcentraties heeft invloed op welk landgebruik mogelijk blijft.

Ander landgebruik kan nodig zijn om ons aan te passen aan de gevolgen van klimaatverandering zoals overstromingen, droogte en zeespiegelstijging. Klimaatrisico's kunnen gereduceerd worden door mensen of infrastructuur te verplaatsen uit gebieden die extra kwetsbaar zijn voor de gevolgen van klimaatverandering. Voorbeelden van dit type *exposure reduction measures* zijn: zonering, gecontroleerde terugtrekking, uitkoop, verhoging van de grondwaterspiegel in landbouwgrond en projecten zoals het Nederlandse programma 'Ruimte voor de Rivier'. Plannen voor ander landgebruik worden echter vaak bestreden door de mensen die momenteel op dat land wonen en werken.

Ethiek kan inzicht geven bij dit soort lastige keuzes. Win-win oplossingen en no-regret opties klinken mooi, maar vaker is het effect van een maatregel: 1+1 = 3 -1. Een maatregel kan positieve effecten hebben, maar wie draagt welk verlies? Een samenleving moet goed onderzoeken waar- en bij wie negatieve effecten terechtkomen en manieren vinden om goed om te gaan met de verliezen die onderdeel zijn van transities. Rechtvaardigheid is een belangrijk concept bij veranderingen in het landgebruik, omdat klimaatadaptatie raakt aan de (her)verdeling van publieke middelen en zeggenschap over land.

Dit onderzoek richt zich specifiek op rechtvaardigheid in controverses over wijzigingen van het landgebruik en (on)vrijwillige verhuizingen vanwege klimaatadaptatie. Mensen zijn het vaak fundamenteel oneens over de vraag of het huidige landgebruik en de bijbehorende manier van leven behouden moet blijven of mag veranderen door klimaatadaptatiemaatregelen. Daaronder liggen normatieve vragen: hoe kan een samenleving floreren in gebieden die onder invloed staan van klimaatverandering? Het algemene doel van dit onderzoek is om het betwiste concept rechtvaardigheid te integreren in waterbeheer en klimaatadaptatie op de lange termijn. In de toekomst kunnen we met name op lokaal niveau meer conflicten verwachten over maatregelen die vragen om wijzigingen in het landgebruik of zelfs verhuizingen. Daarom is het

noodzakelijk om te onderzoeken hoe deze transities op lokaal niveau rechtvaardig kunnen verlopen: niet alleen in theorie, maar ook door te spreken met mensen die geraakt worden door klimaatadaptatiemaatregelen.

Elk hoofdstuk in dit proefschrift presenteert factoren om rekening mee te houden bij het integreren van het betwiste concept rechtvaardigheid in klimaatadaptatie en langetermijnwaterbeheer. Daarin speelt de *capability approach* een grote rol: een benadering in de ethiek die vooral kijkt naar de verschillende mogelijkheden die mensen hebben. In dit proefschrift onderzoek ik met behulp van de capability approach hoe we naar rechtvaardigheid bij klimaatadaptatie kunnen kijken. Een voordeel van de capability approach is dat deze benadering flexibel is en gemakkelijk aanpasbaar aan verschillende contexten. Veel wetenschappers noemen de capability approach als een geschikt ethisch perspectief voor klimaatadaptatie, toch zijn er slechts enkele uitwerkingen beschikbaar. Dit proefschrift presenteert daarom zo'n uitwerking specifiek voor conflicten over wijzigingen van landgebruik en reflecteert daarbij kritisch op de mogelijkheden en beperkingen van de capability approach als aanvullende benadering in de ethiek van klimaatadaptatie (hoofdstukken 3-5).

Dit proefschrift is gebaseerd op de aanname dat onderzoek naar rechtvaardigheid moet vertrekken vanuit bestaande empirische controverses en prioriteit moet geven aan het leren van de mensen die zelf onrecht ervaren, in plaats van enkel te vertrouwen op theorievorming en gestileerde, abstracte situaties. In klimaatadaptatie en waterbeleid is het omarmen van doorleefde ervaringen cruciaal voor het vinden van oplossingen die ook maatschappelijk werken, binnen de historische en politieke context van de klimaatadaptatiecontroverses. Deze empirisch-ethische studie leunt dus sterk op kwalitatieve onderzoeksmethoden, zoals interviews, etnografische observaties en documentanalyse om de ethiek van klimaatadaptatie te onderbouwen.

Zoals bleek uit de casus over het Manila Bay Sustainable Development Master Plan (Hoofdstuk 2), kunnen ontwerpkeuzes in de klimaatadaptatieplanvorming zoals schaalvergroting rechtvaardigheidsclaims van grootstedelijke financieel kwetsbare groepen en kleinschalige vissersgemeenschappen op de achtergrond plaatsen. Rechtvaardigheidsclaims zijn schaalgevoelig en daarom heeft de manier waarop het planvormingsproces is ingericht en de schaal van besluitvormingsfora invloed op welke soorten rechtvaardigheidsclaims makkelijker worden meegenomen. Politieke strijd over verschillende schaalniveaus in planvorming is ingebed in- en wordt beïnvloed door de politiek-historische en economische context. Daarom is voorzichtigheid geboden bij het exporteren van planningsmethoden naar andere

landen, om onbedoelde negatieve effecten voor reeds achtergestelde groepen te voorkomen. Klimaatadaptatieplanvorming die sensitief is voor macht en bestaande politieke strijd, moet rekening houden met de verschillende temporele en ruimtelijke schalen van klimaatadaptatie en de bijbehorende schaal-gerelateerde politieke dynamiek.

De inherente dynamiek van socio-ecologische systemen is lastig te vangen in beleid of milieuwetgeving gebaseerd op formele rechten en abstracte principes. Binnen de capability approach is de *meta-capability Sustainable Ecological Capacity* ontwikkeld om milieubescherming beter te integreren door substantiële ecologische grenzen vast te stellen. De casus Haringvliet (over verzilting in de Nederlandse Zuidwestelijke Delta, hoofdstuk 3) illustreert echter dat die grenzen niet eenduidig zijn op lokaal niveau. Er is op lokaal niveau vaak niet één specifieke systeemtoestand die evident beschermd of hersteld moet worden. Het Haringvliet was ooit een brak estuarium en werd een zoetwatermeer: de meest wenselijke staat van dit sociaalecologische systeem wordt voortdurend betwist. Toekomstige verschuivingen in het sociaalecologisch systeem, zoals het risico op zoetwatertekorten door droogte en zeespiegelstijging, zullen waarschijnlijk het huidige compromis over zoutgehalten in het Haringvliet op losse schroeven zetten. Anticiperend waterbeheer moet zich dus niet alleen richten op de gevolgen van klimaatverandering, maar ook rekening houden met co-evolutionaire dynamiek en politieke heronderhandelingen over eerder vastgestelde ecologische grenzen. Daarom is het cruciaal om procedurele rechtvaardigheid en aandacht voor politieke ongelijkheden te integreren in de capability approach voor rechtvaardigheid in klimaatadaptatie.

Het verbeteren van de voorwaarden voor politieke gelijkheid kan het probleem helpen oplossen dat niet alle actoren evenredige invloed hebben in klimaatadaptatiepolitiek. De politieke mogelijkheden van mensen worden gevormd binnen een web van asymmetrische machtsverhoudingen en bestaande ongelijkheden. De capability approach van rechtvaardigheid integreert meervoudige patronen van sociaaleconomische ongelijkheid en culturele miskenning, zoals die zich manifesteren in verschillende contexten door middel van contextgevoelige conversiefactoren. Zoals de beschrijvingen van controverses over overstromingsrisicobeheer laten zien (in Hoofdstuk 4), blokkeren machtige lokale belanghebbenden vaak maatregelen die goed zijn voor niet-mensen, toekomstige generaties of voor andere actoren met minder politieke mogelijkheden. In de literatuur over overstromingsrisicobeheer en klimaatadaptatie wordt procedurele rechtvaardigheid vaak geconceptualiseerd op basis van rechten of principes. Toch is het belangrijk om verder te kijken dan rechten op papier, door ook te kijken naar sociale resultaten en wat mensen echt kunnen met

die rechten. Sociale, persoonlijke en omgevings-conversiefactoren beïnvloeden de verschillende politieke mogelijkheden die mensen hebben om hun wettelijke rechten om te zetten in daadwerkelijke politieke zeggenschap en invloed.

De instrumentele waarde van het streven naar voldoende politieke mogelijkheden (*political capabilities*) voor iedereen, is dat politieke invloed mensen helpt om andere waardevolle mogelijkheden en hun versie van het goede leven te realiseren. De mogelijkheid om als mens voldoende 'politieke controle te hebben over je omgeving' heeft echter ook intrinsieke waarde: die bedient ook gehechtheid aan land, psychologische veiligheid, je belangen kunnen agenderen en voor jezelf kunnen opkomen. Het erkennen van de intrinsieke waarde van zelfbeschikking en andere waarden waar mensen aan hechten is relevant, vooral in het geval van (on)vrijwillige verhuizingen (Hoofdstuk 4). De capability approach biedt dus een breder perspectief op rechtvaardigheid in klimaatadaptatie dan enkel het streven naar voldoende politieke mogelijkheden en meer politieke gelijkheid.

Om rechtvaardige klimaatadaptatietransities te realiseren, is het belangrijk om voor zowel actoren met veel als weinig politieke mogelijkheden ook rekening te houden met zaken zoals gehechtheid aan land, emoties en menselijke diversiteit. Deze factoren komen terug in de op de capability approach gebaseerde evaluatie van controverses over veranderingen in landgebruik en onvrijwillige verhuizingen (in hoofdstuk 5). Deze operationalisering van de capability approach van rechtvaardigheid kent drie kernvragen die met elkaar samenhangen: 'Wat is een waardevolle manier van leven voor deze persoon?', 'Kan de keuzeruimte worden vergroot?', en 'Wat zijn de opties voor het bieden van gedifferentieerde publieke steun?'. Het gebruik van een contextgevoelig beoordelingskader op basis van de capability approach laat ruimte voor menselijke diversiteit, richt zich op ongelijkheden in informele lobbypraktijken en integreert niet-monetaire waarden in de beoordeling van rechtvaardigheid. Hierbij valt de denken aan de langdurige onzekerheden voor burgers en bedrijven tijdens planvormingen en omgevingsprocessen.

Dit proefschrift bespreekt ook opties voor gedifferentieerde publieke steun die ongelijkheden verminderen en benadrukt de noodzaak om het scala aan gehechtheden en emoties beter te erkennen, die mensen ervaren wanneer hun leefomgeving verandert (Hoofdstuk 5). Het bieden van gedifferentieerde publieke ondersteuning lijkt gerechtvaardigd wanneer dergelijke levensveranderende klimaatadaptatietransities worden doorgevoerd in het algemeen belang. Erkennen dat ervaringen van mensen met verlies en pijn deel uitmaken van transities is essentieel voor het realiseren van rechtvaardige klimaatadaptatie. Bovendien kan het nivelleren van politieke

mogelijkheden nuttig zijn bij het prioriteren van beleidsmaatregelen en onderzoek in een bepaalde context. Of onderzoekers en beleidsmakers bij het streven naar 'voldoende' politieke mogelijkheden prioriteit moeten geven aan het veiligstellen van de ondergrens, het vaststellen van een bovengrens of beiden, hangt af van de specifieke behoeften en details van de lokale klimaatadaptatiecontroverse.

De keuze om met de capability approach rechtvaardigheid in klimaatadaptatie te onderzoeken leidt er onvermijdelijk toe dat bepaalde rechtvaardigheidsaspecten buiten beschouwing blijven of minder prominent aan bod komen. Dit proefschrift beperkt zich tot een onderzoek naar conflicten over landgebruik en (on)vrijwillige door de staat geleide en geplande verplaatsingen van mensen op lokaal niveau. De sterke focus op de lokale werkelijkheid van mensen betekent dat er minder aandacht was voor andere relevante aspecten van rechtvaardigheid, zoals mondiale klimaatrechtvaardigheid, utilistische overwegingen en ecocentrische perspectieven (zie ook de discussie in Hoofdstuk 6). Er bestaan meer aspecten van rechtvaardigheid die belangrijk zijn voor de ethiek van klimaatadaptatie. De capability approach van rechtvaardigheid is dus ook vooral bedoeld om een aanvullend perspectief te geven op bestaande benaderingen. De capability approach kan bijvoorbeeld worden gebruikt als aanvulling op andere normatieve raamwerken, zoals de veelgebruikte utilistische kosten-batenanalyse. Een veelheid aan benaderingen en methoden helpt blinde vlekken te identificeren en legitimerende verhalen kritisch tegen het licht te houden.

Al met al beoogt dit proefschrift een bijdrage te leveren aan het debat over rechtvaardige transities in klimaatadaptatie en landgebruik, in Nederland en daarbuiten. Anticiperen op klimaatrisico's betekent ook anticiperen op conflicten over de keuzes wat te beschermen en wat los te laten. Niet iedereen zal het eens zijn over de noodzaak van deze adaptatiemaatregelen, noch over wat 'rechtvaardige' klimaatadaptatie eigenlijk betekent op lokaal niveau. Dit onderzoek beschrijft daarom meerdere controversen met concurrerende rechtvaardigheidsclaims over klimaatadaptatie. Tegelijkertijd draagt dit proefschrift bij aan de ontwikkeling van de capability approach in de ethiek van klimaatadaptatie.

Annex:
Supplementary material chapter five

Annex: Supplementary material chapter five

The thematic interview guide below (translated from Dutch) was used in the semi-structured interviews held in the spring of 2022. Interviews were in Dutch and lasted 30–120 minutes. Data was stored according to the principles of prior and informed consent and the Human Research Ethics Committee of the TU Delft approved this research. Audio records were fully transcribed and securely stored. Because the topic of (in) voluntary relocation and adaptation controversies is sensitive, special care was taken to guard anonymity and interviewees' well-being during the interview process. When possible, the order of topics discussed was the same in all conversations. However, considering the qualitative nature of this study and the importance of truly listening to interviewees who were describing emotional events, the interviewer departed from the structured list when necessary and also left space for interviewees to raise new topics that were not pre-formulated in the guide.

Thematic interview guide chapter five

1. Introduction of the research

2. Informed consent

3. Explanation of the local situation
   - Who is the interviewee? (age, profession, family situation, etc.)
   - Special characteristics location house/land
   - Details land-use change project (timing, fully completed, aim, contested or not)
   - Was the necessity of the measure contested? Why? By whom?

4. How did you experience this land-use change process?
   - Timeline, finished or still ongoing?
   - *Open question, emphasis "How was it for you?"*
   - *Leave space for interviewee to come up with new themes before starting with pre-formulated themes in the list below.*

5. What could be improved?
   - How were you treated by the professionals that managed/supervised this process? Why? How?
   - *Ask for examples.*

6. What went well?
   - What went well in the land use change process? Why? How? Examples.
   - What helped you during the land use change process /(in)voluntary relocation? Why?
   - Who helped you during the land use change process /(in)voluntary relocation?

7. Loss
   - What do you miss in the new situation? Disadvantages? Why?

8. Gains
   - What is better/improved in your new situation? Why?

9. Role of inequalities
   - *First: Did the interviewee already bring up a theme related to inequalities in the conversation? If so, ask about that theme first.*

- How did you experience the negotiations about the relocation and compensation?
- Professional support: Legal services and/or expert knowledge. Did you hire professional support? Why (not)? Barriers? (money? knowledge?)
- Did you receive all the information you needed? Did you understand the information provided? Barriers?
- Did you see inequalities within your community that meant people were affected differently by the land-use change/relocation process? What were they? What affect did they have?

10. Political inequalities
    - Did you actively try to resist or support the change? How? Why?
    - Did you go to formal state-led participation meetings? Experiences?
    - Did you work together with others in an alliance/association? Experiences?
    - Did you have access to (local) politicians? Did you use that access? Experiences?
    - Did you have access to media? Did you use that access? Experiences?
    - Did you use your personal network? In what way?
    - Do you believe your efforts to influence the decision/plan were fruitful? Why (not)?

11. Self-determination
    - Did you feel you had sufficient room for choice during the process? Can you give specific examples?
    - Where in the land-use process were you able to make decisions/influence? Planning, implementation, and/or design.
    - What aspects of the project are in line with your goals in life? Did you get what you wanted regarding your house, livelihood and/or community? Why (not)?

12. What else is important for understanding the land-use change process/conflict you experienced?

13. If you were to design and supervise a land-use change process yourself in the future, what would you do better?

14. Do you know someone else I should talk to?

15. Thank them and explain next steps in the research process.

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About the author

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Lieke Brackel (1995) completed her PhD in Ethics of Climate Adaptation and Water Engineering at Delft University of Technology, Faculty of Technology, Policy and Management between 2019 and 2023. Next to working as a PhD candidate, Lieke taught Water Ethics and Ethics of Aerospace Engineering at TU Delft. She also gave lectures and workshops for the Delta Futures Lab and the Planning and Design for the Just City summer school. Before joining TU Delft, Lieke studied International Land and Water Management (MSc Wageningen University and Research, 2019, cum laude), Philosophy (BA University of Amsterdam, 2017, cum laude), and Future Planet Studies (BSc University of Amsterdam, 2017).

Finding connections between academic research, public policy and public communication is important to Lieke. As a PhD candidate, she completed the European Commission Blue Book traineeship in the cabinet of Executive Vice-President Timmermans (EU Green Deal), presented her research to policymakers and represented Sail to the COP during the UNFCCC climate conference COP25 in Madrid. During her earlier studies she worked at the European Press Prize, participated in the political campaigning academy BKB '18, and interned at the public-private network organization Green Deal Green Roofs, a Philippine community-based disaster risk reduction NGO and the Dutch Ministry of Infrastructure and Water. In the first two years of her PhD, Lieke also contributed to the Intergovernmental Panel on Climate Change (IPCC) meta-review about the effectiveness of adaptation responses for the water chapter of the 6th IPCC assessment report, Working Group II: Impacts, Adaptation, and Vulnerability.

List of publications

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Brackel, L., Pesch, U., & Doorn, N. Just transitions in climate adaptation: Assessing state-led involuntary relocations and land use change with the capability approach to justice. *(Under review)*

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Brackel, L., Boelens, R., Bruins, B., Doorn, N., & Pesch, U. (2023) People in PowerPoint Pixels: Competing justice claims and scalar politics in water development planning. *Political Geography*, 107, 102974.

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