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Operationalising climate justice: a case study of experiences of flooding and flood governance in Rochdale Borough

Juliet de Little

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Addendum

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Abstract

Climate justice is becoming increasingly established as a theory capable of navigating the complex challenges and arising inequalities of climate change. However, there are few empirical investigations, particularly global north adaptation-related, which employ justice as their analytical framing. More specifically, research into flooding lacks a normative framework which can be applied across broad aspects of flooding. The aim of this thesis is to devise and operationalise a climate justice framework for investigating climate adaptation approaches, specifically responses to flooding in England.

The climate justice framework intended for investigating flooding in England is based on four tenets of justice: epistemic justice, justice as recognition, procedural justice, and distributive justice. The objectives were threefold. First, to understand the flooding experiences and related concerns of residents and flood governance actors affected by flooding. Second, and based on these accounts, to understand the extent to which the climate justice framework is compatible with the concerns of residents affected by flooding. Finally, to apply the framework to flood governance policy documents to analyse them for themes of climate justice.

The research found that residents affected by flooding actively managed their own flood risk and hold valuable experiential knowledge about flood risk in their areas. The majority felt that the impacts of flooding outlasted the physical water and residents expressed a desire to feel more heard in flood governance processes. Flood governance actors expressed concern for residents and systemic challenges which led to fragmentation in governance procedures. These experiences and concerns reflect themes captured by the climate justice framework, although there are implications for how the framework is used and by whom. The analysis of two flood governance policy documents demonstrated that there is a shortfall of climate justice considerations in English flood policy. Through a reflexive application of the climate justice framework, I show that it can offer new perspectives for considering flooding by centring the voices of people affected.

Empirically, this thesis provides an original contribution through the empirical accounts of flooding in Rochdale Borough, thus highlighting the disjuncture from a justice perspective between everyday experiences and flood governance intentions. It reinforces how the impacts of flooding reach far beyond the physical floodwater and have significant ongoing consequences. Theoretically, through reflexive operationalisation of the climate justice framework, I demonstrate that it can offer new perspectives for considering flooding by centering the voices of people affected. This contributes an empirical application of climate justice to a growing field which will be vital to ethically navigating the impacts of climate change.

Table of Contents

List of figures

List of tables

Declaration

I, Juliet de Little, confirm that this Thesis is my own work. I am aware of the University's Guidance on the Use of Unfair Means (www.sheffield.ac.uk/ssid/unfair-means). This work has not previously been presented for an award at this, or any other, university. There are no publications arising from this work.

Chapter 1 | Introduction

1.1 Introducing the thesis

With the increasing frequency of extreme weather events, the impacts of climate change are becoming ever more serious. Notably, flooding is considered one of the most prominent risks to England (Cabinet Office, 2020). This thesis, exploring what climate justice might comprise in England, is located at the intersection between the significant risk of flooding and the increasing inequality experienced by those affected. Furthermore, as stated in the foreword to the 2022 IPCC report, "It is clear that across sectors and regions, the most vulnerable people and systems are disproportionately affected" (IPCC, 2022a). This statement is not news to those affected by the impacts of climate change; since (at least) the 1990's, grassroots groups have called for climate justice in response to the depoliticised, technical climate governance discussed at global conferences (Jafry, Helwig and Mikulewicz, 2018a). This thesis aims to empirically operationalise a climate justice framework in the hope of beginning to envision a compelling alternative future.

This thesis develops its operationalisation of climate justice via a worked, single case study focusing on experiences of flooding in Rochdale Borough. This chapter introduces the research. Section 1.2 argues for climate justice as a framework capable of highlighting, exploring, and responding to the (multiple, overlapping, already existing) inequalities exacerbated through acute climate impacts. Following this, Section 1.3 introduces flooding as the most significant climate adaptation issue in the UK, laying claim for the case study location of Rochdale Borough. Section 1.4 provides a summary of the research aim and questions. This chapter finishes with Section 1.5, which provides an overview of the thesis structure.

The development of this thesis arises from aspects of my experiences, politics, and education thus far: my interest in climate justice comes from climate activism, and my interest in flooding comes, in part, from my civil engineering background. Hence, in addition to the academic justifications discussed, the topic of this thesis reflects personal passions and interests. In line with feminist standpoint scholarship, (e.g. Haraway, 1988), at relevant points throughout this chapter and thesis I will draw on personal experiences to embellish the discussion.

1.2 A case for climate justice

I will turn to the academic justification below but first it is worth contextualising my entry point to climate justice, since it is one of the underpinning motivations for this project. I encountered discussions of climate justice after attending a 'march for the climate' in London 2014. I was not aware

Figure 1-1. Wretched of the Earth bloc at 'March for the Climate', 2015 (photo taken by Wretched of The Earth Collective, New Internationalist, 2015)

of the events at the time, but they have been recounted by attendees, Joshua Virasami and Alexandra Wanjiku Kelbert, for an article in the New Internationalist (2015). There were various 'blocs' at the march, including the Wretched of the Earth (WoTE) bloc, which was representing communities of colour on the frontlines of climate change. The WoTE bloc were due to lead the march, however, at the last minute they and their banner (see Figure 1-1), were displaced by larger NGOs with animal props, and signs reading 'We do this for the love of skiing'. The dissonance between attendees representing people whose livelihoods and lives were at risk from climate against those who were worried about their winter holidays resonated with me (and many others), highlighting how the impacts of climate change are not equally felt or shared.

This was my first experience of witnessing narratives around climate change as political and making evident the role of the 'justice' aspect of climate justice. As, Virasami and Wanjiku Kelbert wrote, "Now more than ever, we know that not only do we have to fight against climate change and the capitalist-colonialist system which it hails from, we also have to fight against the UK's whitewashed colonialist climate movement which perpetuates the oppression, erasure and brutality we face daily" (New Internationalist, 2015). As illustrated in this quote, the importance of listening to often unheard voices in a climate movement(s) in order not to reinforce existing (colonial) power structures is paramount. A climate justice approach can address this, offering a set of values and principles founded on solidarity and collectivity, and which can be mobilised to identify struggles, locate actions, and convene people around a particular struggle. As highlighted by Virasami and Wanjiku Kelbert, this

mobilization is not without tensions. Resultingly, climate justice as an approach is necessarily contested.

Having emerged from grassroots roots of challenging the status quo, embedded within climate justice is an analysis of power. As the quotation from IPCC in Section 1.1 acknowledges, there is unbalanced power in the impacts of climate change. Within climate campaigning groups, the practices of looking back and learning from previous movements is referred to as an exercise called 'standing on the shoulders of giants' (for example, practised by the New Economy Organisers Network). This thesis does not engage explicitly with power and intersectionality because it is focus primarily on what a climate justice framework might consist of first. However, it is important to acknowledge here all of the struggles and theories that have influenced climate justice and which it is both built on and encompasses.

Acknowledging the presence of power dynamics introduced in the previous paragraph, I want to note that I recognise the complexities of my engagement of climate justice from the perspective of a middle-class, white academic who is engaging with climate justice for climate adaptation in England. My positionality contrasts with the roots of climate justice emerging ~30 years ago from grassroots in the global south. Furthermore, and taking heed from bell hooks (1984) , I am wary of narratives which co-opt radical emancipatory terminology for their own benefit, eventually reducing its original potency. Thus, my intention in this thesis is to engage with climate justice in the spirit of learning *from*. Struggles for climate justice are everywhere: at different scales, from different voices, responding to different contexts. As such, the application of this politics of climate justice can be contextualized in localities without imposing universal standards, which is why I think climate justice can be constructively translated from its multiple roots to consider flooding in England. Though this thesis, I will introduce, develop, and reflect on the possibilities offered by a contextually transferable 'living' framework of climate-just adaptation for responding to and managing flood risk in England. Climate justice offers not only a more comprehensive account of climate disasters, as it takes into account the social aspects of governance and the (un)natural event of flooding, but also envisions transformational futures.

Turning back to the academic justifications for focusing on climate justice, the traction that climate justice developed through grassroots campaigns has translated into a flourishing literature (e.g. Jafry, Helwig and Mikulewicz, 2018b). Climate justice is presented and discussed as a concept, theory, or framework capable of overcoming critiques offered to alternative climate response theories. For example, Mikulewicz argues that resilience framings depoliticise climate change and are unable to acknowledge the structural mechanisms at play (Mikulewicz, 2019). In addition, Stephens

argues that dominant framings of climate change as a scientific and technical challenge have resulted in 'climate isolationism', whereby climate impacts are considered as discrete issues (Stephens, 2022). Proponents of climate justice argue that it provides a promising frame through which to investigate climate change as a political, ethical, intersectional, and interconnected issue, which is further evidenced below.

While climate justice has attracted interest from academia, Boran noted in 2019 that climate justice "debates are rich in arguments but poor in case studies" (2018, p. 35). This call for empirical analyses of climate justice forms a further justification for this thesis. The research aim of operationalising a climate justice framework in the context of climate adaptation is a complex undertaking, due to adaptation goals being contested and evolving (Siders, 2022), to the extent that some scholars question "whether and to what extent climate justice principles can be translated and applied to the context of adaptation and resilience" (Byskov *et al.*, 2019, p. 2). The theory and discussion within this thesis aim to counter this quote and demonstrate how climate justice principles can be applied to elucidate empirically and theoretically rich insights into flooding in England.

Climate change is political. As published in a 2022 IPCC report, the inequalities arising from anthropogenic climate change are undoubtable, "human-induced climate change has caused widespread adverse impacts and related losses and damages to nature and people, beyond natural climate variability" (IPCC, 2022a, p. vii). The year 2022 alone saw disruptive floods, wildfires, and record-breaking temperatures. Assuming empathy for other living beings, the inequalities and, often devastating, impacts from climate change require ethical considerations when envisioning alternative futures. That climate change requires such immediate response has often resulted in the use of urgent language, such as 'emergency' and 'crisis'. However, as Tokar (2018) reminds us, urgency is a cause for consideration, as quick decisions may be more likely to further existing inequalities, resulting in deeper and compounding injustices.

Within the recognition of climate change as ethical challenge, climate justice requires highlighting that the power and systems which led to climate disruption also contribute to wider inequalities such as poverty and economic inequality (Tokar, 2018). Further, scholars such as Stephens argue that it is these systems which continue to worsen climate impacts *unless* they are actively focusing on climate justice, "Policies and decisions at every level are either perpetuating climate injustices if they are not intentionally and explicitly trying to reduce climate injustices" (Stephens, 2022, p. no page numbers). In addition to the systemic nature of climate impacts, climate justice scholars highlight the intersecting and compounding impacts of climate change and other manifestations of oppression experienced by the most marginalized (Sultana, 2022).

Climate justice scholars (e.g. Osborne, 2015; Sultana, 2022) draw reference to critical theories: including intersectionality (e.g. Crenshaw, 1989), feminism (e.g. Ahmed, 2017), anti-racism (e.g. Lorde, 1984), and decolonialism (e.g. Freire, 1970). Consequently, it is evident that anti-oppressive theories are foundational to understandings of climate justice. This is relevant both across the theories used to develop concepts of climate justice and the practice associated with it. With climate justice arising from plural roots, it follows that the term is considered to have 'conceptual and contextual diversity' (Jafry, Helwig and Mikulewicz, 2018a). The similarities underpinning the diversity, however, can be encapsulated as recognising "humanity's responsibility for the impacts of greenhouse gas emissions on the poorest and most vulnerable people in society by critically addressing inequality and promoting transformative approaches to address the root causes of climate change" (Meikle, Wilson and Jafry, 2016, p. 497). In addition, I contend that the definition above would benefit from emphasizing that the most marginalized people hold experiential knowledge regarding what it is like to live with climate change.

It is in all our interests, marginalized or not, to work collectively against structures of oppression, especially with the compounding climate, economic, and health crises define our daily lives. As one activist group put it, "If you have come here to help me you are wasting your time, but if you have come because your liberation is bound up with mine, then let us work together" (Aboriginal activists group, Queensland, 1970s) [1]. This statement captures an important essence of climate justice; it is concerned with working together across different knowledges in contrast to some 'saviour' narratives of paradigms such as vulnerability and development. This is pertinent when considering that the principles of climate justice centre those most affected, a necessarily situated and context-dependent consideration.

This section has highlighted the (global) urgency of responses to climate change as paramount, a key concern of this research both from an academic and a personal perspective. A particularly novel aspect of the research is that there are few empirical studies exploring climate justice in the global north. It's relevant to add that, while it feels like climate change crises have increased in England since I started my PhD in 2018, other nations, countries and peoples have been feeling these impacts for a long time. Drawing on the power dynamics discussed earlier, it is no coincidence that global action is discussed more publicly now, since wealthier and powerful countries are being affected. This thesis acknowledges this and argues for climate justice as a framework capable

[1] Lilla Watson is often credited with this phrase, but she has said that she is "not comfortable being credited for something that had been born of a collective process", instead preferring the credit "Aboriginal activists group, Queensland, 1970s" (Sovereign Union, 2011)

of highlighting, exploring, and responding to the (multiple, overlapping, already existing) inequalities exacerbated through acute climate impacts.

1.3 Investigating flooding in England

If, as I have highlighted above, climate justice is concerned with the opinions of those most affected, then there requires explanation as to why the focus of this thesis is England - since there are more extreme climate impacts in many other places. The reasons for situating this research in England are three-fold. Firstly, the UN investigation of poverty in England found that one fifth of the British population lives in poverty, with 5% of people more than 50% below the poverty line and 2% destitute (Alston, 2018). Evidently, England has a significant number of people on the front lines of both poverty and climate impacts. While people in England may be rich globally, relative poverty and inequality matter. These statistics demonstrate that people can be poor with respect to their own society, and this is a matter of (in)justice, if it is avoidable within that society but those in power choose not to address it.

Secondly, having grown up in England, I have personal exposure to and experience of local and national governance systems, as well as informal knowledge around communication practices, relationship building and cultural context. This skillset became evident when I worked abroad as an engineer, and the governance context proved challenging to navigate. This deep understanding has proved invaluable to me during the fieldwork process.

Thirdly, responding to the impacts of climate change is a collective effort. Approaches for transformation ought to be situated and contextual, thus efforts in all areas are valid and offer opportunities to learn from. During the research I have been mindful of case studies elsewhere and these have influenced my research design and analysis. While there is a clear rationale for focusing on an English context, there may be potential to consider the transferability of this work to similar country contexts. I return to this discussion in the thesis conclusion.

In a similar vein to above, there are also personal and academic justifications for focusing on flooding. Firstly, prior to this PhD, I trained as a civil engineer, specifically working in drainage and flood risk modelling. I worked on a project where I witnessed first-hand the inequalities embedded within funding allocation decisions for flood risk investments. This experience sowed the seed for this research project, as I began to question the responsibility placed on engineers to practice ethical considerations for their projects. Secondly, when I was working as a drainage engineer in Kibera, Nairobi I learnt from residents and colleagues that their experiences of flooding were daily occurrences which did not cause much disruption, at least compared to other concerns. This is not to say that the material and social realities of colleagues in Kibera were perfect by any stretch of the

imagination, but it contrasted strongly with the accounts of flooding experience that I had read in the UK. Again, this experience led me to reflect on the reasons that some people experience flooding as an inconvenience whereas others find it life changing.

Academically, the focus on flooding stems from the increase in intensity and frequency of rainfall. Potentially exacerbated by factors such as urbanization, investment patterns, and pandemics, the IPCC state that flooding is the overarching climate impact for adaptation in the UK. As the IPCC states, "[c]limate change impacts and risks are becoming increasingly complex and more difficult to manage. Multiple climate hazards will occur simultaneously, and multiple climatic and non-climatic risks will interact, resulting in compounding overall risk and risks cascading across sectors and regions" (IPCC, 2022b, p. 18). Acknowledging the complexity of climate impacts highlighted above, I also recognize that weather systems and the impacts of climate change are complex, wicked, and interactive: specific impacts of flooding depend on the antecedent conditions such as whether soil or sewerage systems are saturated, whether there has been a heatwave or a drought, or neither. Although this thesis focuses solely on flooding, having an awareness of the interconnectedness and situated aspects of climate impacts, the findings here can provide a building block from which further studies engaging in all types of climate adaption could follow.

1.4 The research project

As outlined above, my motivation to undertake this climate change related research is the belief that systemic change can lead to a fair and empowered future(s). My research looks at climate justice and flooding in the UK, prompted by a desire to understand the relationship whereby vulnerable people are the most at-risk of being flooded. The impacts of flooding do not stop with a rainfall event; after being flooded, the most affected people are also less likely to be insured (ability to restore houses and belongings), are more susceptible to develop mental and physical health issues and struggle to maintain job stability throughout the experience (Whittle *et al.*, 2010).

As outlined in the title, this thesis operationalises a climate justice framework through a worked, single case-study investigating experiences of flooding within a single local authority, Rochdale Borough. The purpose of this thesis is to develop climate justice scholarship by thinking through what climate just practices for responding to flooding could look like in England, specifically through a case study of experiences of flooding in Rochdale Borough. It realizes this aim by answering the following research questions (RQs):

RQ1. What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?

RQ2. To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?

RQ3. How climate-just is English flood policy?

In total 24 interviews were undertaken digitally, due to the Covid-19 pandemic. The interview sample comprised 15 residents of Rochdale Borough affected by flooding and 9 flood governance actors. All interviews were recorded, transcribed, synopsized, and checked by participants before being coded. In addition, two flood governance policy documents were analysed alongside the interview data: the Flood Risk Management Strategy authored by Rochdale Borough Council (Rochdale Borough Council, 2014) and 'Understanding the risks, Empowering Communities, and Building Resilience: the national flood and coastal erosion risk management strategy for England', published in 2011 by the Department for Environment, Farming, and Rural Affairs (Defra and Environment Agency, 2011). I conclude the thesis by addressing the findings of RQ1, RQ2, and RQ3 together, to discuss how successfully these met the overarching aim of operationalising a climate justice framework for investigating flooding.

1.5 Outline of chapters

Having established the aim of operationalising a climate justice framework, this last section of the introduction provides a synopsis of the remaining chapters, which can be split into two key areas: contributing to the conceptual, theoretical, and methodological framing of the project (chapters two – four) and presenting the empirical work (chapters five – eight).

1.5.1. Chapter 2: Developing a theoretical climate justice framework for exploring climate adaptation in England

The next chapter introduces climate justice as the central theory for investigating impacts of flooding in England. Three sections are presented to introduce and justify a theoretical climate justice framework. Firstly, climate justice is introduced as an evolving concept which has been used to address and understand many climate change challenges, although none that relate to investigating climate adaptation in a global north context. Thus, the chapter turns to a discussion of the key elements of climate justice, tenets and cross-cutting themes, to explore how they are used by scholars. Finally, and building on the versions of climate justice discussed, a tentative climate justice framework is presented. It is comprised of epistemic justice, justice as recognition, procedural justice, distributive justice. Reflections on the role of spatial and temporal considerations are also considered.

1.5.2. Chapter 3: Flooding, flood governance, and climate justice in England

The chapter builds on the conceptualisation of flooding as an environmental, social, political, and contextual concept, which is slow-onset and experienced pluralistically. It investigates how

flooding in England is politically constructed through the processes of flood governance. A brief history of flood-related policy is provided which outlines the governance shift from keeping 'water at bay' to 'living with water' in parallel with a general trend to include more people in flood governance rather than focus on engineered flood defences. The chapter concludes by turning to considerations of justice within current flooding and flood governance scholarship flood governance, in particular some of the lenses investigating the uneven and unjust distribution of flood risk.

1.5.3. Chapter 4: Research design and methodology

This chapter introduces the research aim and questions in the context of the theoretical and contextual literature reviews. It justifies a critical realist approach, and the use of case study to investigate flooding in England and operationalise the climate justice framework. In addition, it outlines how the pandemic shaped the need for virtual interviews, fieldwork diary-keeping and document analysis to deepen understanding of experiences of flooding and flood governance in Rochdale Borough. The chapter explains how emergent and theoretically informed coding approaches were used to analyse the generated data.

1.5.4. Chapter 5: Experiences of flooding and flood governance in Rochdale Borough

Along with the following chapter, this chapter investigates the extent to which the topics emerging from empirical work documenting experiences of flooding and flood governance are aligned with the theoretical climate justice framework. This chapter addresses RQ1, 'What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?' and focuses on empirical data, specifically the experiences of flooding and then the experiences of flood governance. It is split into two substantive sections. The first concerns experiences of flooding from people affected by flooding in a personal, rather than professional, capacity. The second substantive section, presents experiences of flood governance, including content from all participants – both residents and affected by flooding and flood governance actors.

1.5.5. Chapter 6: The potential for operationalising a climate justice framework for investigating flooding in England

Chapter 6 addresses RQ2, 'To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?' This RQ is addressed by reflecting on the empirical data discussed in the previous chapter using the analytical guiding questions for each of the tenets of justice developed in the methodology chapter. Applying the theoretical climate justice framework tentatively, the chapter reflects on if and where themes relating to each of the four tenets arise within the empirical data from the previous chapter. The chapter concludes with reflections about the usability of the climate justice framework.

1.5.6. Chapter 7: How climate-just is English flood policy?

Chapter 7 seeks to answer RQ3, 'How climate-just is English flood policy?' by employing the theoretical climate justice framework as an analytical tool for investigating if and where themes relating to the four tenets of justice arise within two English flood governance policy documents. The chapter is structured according to the tenets of climate justice, addressing the themes arising across the flood governance documents in turn and concluding with remarks on the extent to which the flood governance policy documents include themes of climate justice.

1.5.7. Chapter 8: Thesis conclusion

In the conclusion, I revisit the thesis aim, *to operationalise a climate justice framework for investigating flooding via a case study in England* and reflect on how successfully it was met. Operationalising refers to both the theoretical relevance and usability of the framework to understand climate justice in relation to flooding in England. The chapter discusses the original contributions to knowledge and arising implications for policy and practice. This chapter concludes with reflections on the research approach and highlights avenues for further research.

Chapter 2 | Developing a theoretical climate justice framework for exploring climate adaptation in England

2.1 Introduction

This chapter delves into the theoretical roots of climate justice. While there is a broad shared definition of climate justice - that the injustice arises from the fact that those most affected by climate change also are the least responsible - there are numerous different interpretations of what climate justice consists of more specifically (Phillips *et al.*, 2022). These differences arise due to different paradigms, values, applications, metrics, and contexts. For example, climate justice at a geopolitical scale looks very different to climate justice considered within a neighbourhood and would be indicated by contrasting indicators or approaches. Despite the shared broad definition of climate justice, its evolution can be traced, and it continues to develop. This journey is discussed in Section 2.2 of this chapter.

Across the different interpretations of climate justice, there are two types of common element: tenets and themes. There are four tenets - epistemic justice, justice as recognition, procedural justice, and distributive justice - which recur across interpretations to lesser or greater extents. Tenets are often overlapping and intwined (McCauley *et al.*, 2013), but each offer unique perspectives and are thus combined for specific enquiries. Themes crosscut the tenets and include temporal and spatial scale, and rights and responsibilities.

The thesis introduction presented how climate justice can offer intersectional, political, versatile, and situated responses to climate change. Given the increasing intensity and frequency with which we can expect extreme climate events, the often-distressing social impacts on those who experience them, and the political nature through which responses to them are organized, it was argued that a justice frame is vital. However, there is no evidence of climate justice applied in a similar context, of climate adaptation in a similar country context to England. Thus, in Section 2.3, I present a discussion of how these four tenets appear across different interpretations. Building on this, Section 2.4 establishes a climate justice framework developed specifically for investigating flooding in England.

2.2 Climate Justice: an evolving concept

Climate justice can be understood as an evolving concept because it is ever being used to address different issues and contexts (Meikle, Wilson and Jafry, 2016). Therefore, the aim of this section is to situate my study within the broader climate justice literature. Climate justice has been a topic of academic work for some time, having emerged and developed from environmental justice and alongside energy justice. Environmental justice is historically concerned with the distribution of environmental harms (Schlosberg, 2007; Holifield, Porter and Walker, 2009), and energy justice is

concerned with production, distribution, and access to energy systems, often termed a 'just-transition' in the broader context of climate change (Fuller and Mccauley, 2016; McCauley and Heffron, 2018; Phillips *et al.*, 2022). As described in the thesis introduction, the genealogy of climate justice is strongly related to other emancipatory agendas and thus shares some similarities. However, as this thesis intends to operationalise climate justice, the rest of this chapter speaks only to debates within the climate, and sometime environmental, justice literature.

Climate justice to date has focused on mitigation, in other words, causes of injustice and responsibility for emissions (e.g. Caney, 2001; Audet, 2013; Chatterton, Featherstone and Routledge, 2013; Fuller, 2017; Slocum, 2018; Warlenius, 2018). However, there is a growing interest in exploring climate adaptation, because "adaptation [is] a difficult problem to solve, much less to solve in a just manner, which is why adaptation justice is emerging as a major area of empirical and theoretical research" (Siders, 2022, p. 280). Therefore, despite Byskov *et al.*'s (2019) challenge of how climate justice can be a important lens for climate adaptation, this chapter takes on the tasks of arguing that translation of climate justice and application to climate adaptation is not only possible, but valuable.

Climate justice is articulated differently and applied across a broad range of contexts by a range of people, but there are certain similar themes or elements which indicate that studies are concerned with 'climate justice'. In a systematic review, Jafry, Helwig and Mikulewicz found the following themes present across climate justice approaches:

- A vision to dissolve and alleviate the unequal burdens created by climate change.
- A commitment to address the disproportionate burden of the climate crisis on the poor and marginalised.
- The recognition that the most vulnerable are the most deserving.
- Dismantling the fossil fuel corporate power structure.
- A commitment to reparations and fair distribution of the world's wealth.
- A way to encapsulate the equity aspects of climate change.
- An effort to redress global warming by reducing disparities in development and power structures that drive climate change and continued injustice.
- A human rights-based approach to climate justice safeguarding the rights of the most vulnerable affected by climate change (2018a, p. 3)

Chapter 2 | Developing a theoretical climate justice framework for exploring climate adaptation in England

In this thesis, climate justice is understood as underpinned by a shared focus that "equity and justice aspects [are] inherent to both the causes and the effects of climate change" (Jafry, Helwig and Mikulewicz, 2018a, p. 3). This focus aligns with the definition of climate justice as including "a focus on the root causes of climate change and making the systemic changes that are therefore required, a commitment to address the disproportionate burden of the climate crisis on the poor and marginalized, a demand for participatory democracy in changing these systems which require dismantling the fossil fuel corporate power structure, and a commitment to reparations and thus a fair distribution of the world's wealth" (Hall, 2013, p. no page number).

This thesis aligns with the claim that "climate justice has enormous value as an interpretative framework within which to examine and evaluate responses to climate change" (Meikle, Wilson and Jafry, 2016, p. 491), and sets out to develop a framework, founded on climate justice literature, which can investigate climate adaptation, via a case study of flooding in England. In order to develop such a framework, I will first explore and present how climate justice is applied elsewhere.

In campaigning spheres, climate justice involves similar themes to those listed above, and is widely discussed in the following terms: the people most affected by climate change are the least responsible for emissions, have experiential knowledge about living with climate impacts, and have the least capacity to respond[2]. This phrase distils the essence of Hall's description above, explicitly placing the most affected at the heart of concerns about climate impact and highlighting the power dynamics that have led to this. In addition, it emphasises the value of the experiential knowledge held by the people most affected.

The definition of climate justice discussed thus far has scope for various interpretations. For example, in some contexts, whether analyses of the 'most affected' relates to individuals or to collectives (Schlosberg, 2012), noting the inclusion of more-than-humans within this definition (Tschakert *et al.*, 2021). This chapter aims to explore approaches to climate justices to conclude with a clear position on how I have interpreted this definition.

However, multispecies justice considerations are outside the scope of this thesis, which focuses on peoples' experiences of flooding in England. Similarly, while this thesis recognises the complexities embedded within claims of climate mitigation, relating to who is responsible for climate

[2] This term was commonly used during my engagement with climate campaigns and, as far as I am aware, cannot be attributed to one group or person.

change (especially since England as a state has a highly polluting history), this is not a focus of this thesis.

The emphasis of climate justice within this work engages mostly with claims that the people most affected (by flooding in England) are most knowledgeable about what it is like to be flooded and have the least capacity to respond. There is a risk of engaging with people under the label 'vulnerability' that people affected are seen only as vulnerable and needing support, rather than autonomous and experts in their experiences.

Positioning climate justice as an evolving concept that may manifest differently in different times, places, and by different peoples allows climate justice to function as a politics which can be collectively applied in specific locations without creating issues of universalism, such as a lack of sensitivity to varying contexts. Thus, while undertaking this research I will also reflect on the implications of all the various interpretations of climate justice, specifically considering whether they can be reconciled and whether that is advantageous? Climate justice practitioners seek flexibility and adaptable across scales and contexts. Having a breadth of concern for the broad definition of climate justice means that different aspects can be foregrounded in different contexts, depending on what is most pressing.

Alongside application by campaigners, from global conferences to local protests (Climate Justice Alliance, 2010; Chatterton, Featherstone and Routledge, 2013), climate justice has been applied in academic work. These variations of topic and application within climate justice scholarship reflect the multiple manifestations and materialisations in which climate change presents itself. Although there is flexibility in the nature of interpretations of climate justice, it is possible for climate justice to be appropriated and used counter to the intended aim(s), as Tschakert *et al*. highlight, "some climate justice approaches, particularly those couched as resilience-building programs among vulnerable populations, can too easily perpetuate structural racism and intersecting traumas" (Tschakert *et al.*, 2021, p. 3). Taking care to consider and avoid potential reinforcement of existing power structures and following on from the spirit of *learning from* discussed in the Introduction, I will turn now to discussing the core tenets of climate justice.

Many more empirical studies of climate justice have been published since I began this research (e.g. Newell *et al.*, 2021; Tschakert *et al.*, 2021; Forsyth and Mcdermott, 2022) and have been retrospectively included. During the development of my climate justice framework there were fewer to learn from. Instead, ideas about environmental justice were key to informing the definition of climate justice (Hall, 2013), they frameworks were considered valuable examples for climate justice framework development.

2.3 Core tenets of climate justice

As noted by Bulkeley *et al* (2014), a particular benefit of climate justice is that is can be used as both an analytical framework for making justice claims *and* a framework which can provide ideas about climate just interventions. In its analytical role, different interpretations of climate justice generate different frameworks, against which certain things (e.g. statistics, policy, accounts, experiences) can be scrutinised in order to explore the extent of climate justice. The frameworks employed in these examples generally use a combination of tenets to investigate a particular process. Tenets can be understood to address distinct areas which, when applied together, intend to comprehensively underpin broad processes or policy areas (Holifield, Porter and Walker, 2009). Some frameworks combine aspects of distinct tenets to consider 'co-ordinates' (Tschakert *et al.*, 2021) or 'directions' (Newell *et al.*, 2021) for climate justice.

Core tenets of climate justice include epistemic justice, justice as recognition, procedural justice, and distributive justice. This section is structured through considerations of each tenet in turn, discussing key debates within each. The discussion starts with experiences of those affected (epistemic), to then consider how they are recognised (justice as recognition) before turning to how policy, institutional, or organisational process's function (procedural justice), and finishing with how the decisions, goods, or harms are shared (distributive justice). However, as I will discuss below, there is no widely agreed or logical order to tenets in practise.

Forsyth *et al*. highlight how engaging with (in their case, three) tenets of justice as recognition, procedural justice, and distributive justice should not be confused "with ascribing uniform experiences of vulnerability or political agency to [marginalised] groups" (2022, p. 6). Although tenets of justice seek to rebalance the injustices experienced by the most marginalised, it is pertinent to remember that there are not universal solutions to the complex consequences brought on by the impacts of climate change.

Different versions of climate justice place varying emphasises on the tenets of justice, in terms of whether and how they are considered independently and together (Schlosberg, 2012). Towards the end of this subsection, I will reflect on interactions between the tenets. Furthermore, there are two themes – considerations of scale, and rights and responsibilities - which cut across the different tenets. I will conclude this section by reflecting on how these themes are discussed in the literature.

2.3.1. Epistemic justice

Epistemic justice, a concept attributed to work done by Fricker (2007), refers to questions of 'whose knowledge counts'. Epistemic justice has two strands: testimonial injustice and hermeneutical injustice. Testimonial injustices, the first strand, occur when certain accounts are not trusted, often

due to aspects of the speaker's (or writer's) identity (e.g. age, race, gender, accent). This can be considered as relational, since there must be someone who decides not to trust an account due to prejudices (or sometimes mistakes). Hermeneutical justice, the second strand, refers to the ability of the knower to be able to interpret their own experiences. For example, and especially relevant to distressing climate impacts, some people may not have the language to describe what they have experienced and thus their knowledge remains unknown, rendering them voiceless. These two strands can interact negatively, for example if someone gives an account in English when it is not their first language, they literally may not have the words to describe something, which can further be interpreted as them not being a trustworthy source (Fricker, 2007). Depending on the context, additional impacts of identity, such as race, gender, and age, may also intersect and exacerbate (or reduce) the voicelessness.

Cognitive justice is concerned with similar questions of 'which knowledge counts', and was developed by Visvanathan (1997). Epistemic justice engages with power dynamics relating to trust and testimonies but does not explicitly engage with the types of knowledge that are trusted. Visvanathan's theory of cognitive justice "recognises the right of different forms of knowledge to co-exist, but adds that this plurality needs to go beyond tolerance or liberalism to an active recognition of the need for diversity" (Visvanathan, 2009). This description challenges not only the person who can be considered to know, but also the type of knowledge that is considered trustworthy. For example, scientific knowledge professions (e.g. engineers, nurses, doctors) are considered the most trustworthy in the UK (Ipsos, 2020). In contrast, accounts which illustrate a different way of experiencing the world to our own can be misunderstood as wrong – Visvanathan notes how traditional knowledge (in India) can be "considered as unofficial or illegal through certain forms of intellectual apartheid" or "labelled the lesser form and can at best exist as marginal knowledges practiced within the informal economy" (Visvanathan, 2009, p. no page numbers).

Epistemic and cognitive justice approaches, concerned with 'whose knowledge' and 'which knowledge' together can provide a lens through which to interrogate how knowledge and identity are inseparable as are the judgements upon them, whether due to epistemic injustices (who is talking, and how 'eloquent' they are considered to be) or cognitive injustices (what is the 'type of knowledge'). I will use the only the term epistemic justice to encompass both ideas from here forwards.

Epistemic justice aligns with climate justice since there is a shared goal of centring and listening to how those most affected are experiencing climate change. Only more recent accounts of climate justice refer to epistemic justice (Newell *et al.*, 2021; Forsyth and Mcdermott, 2022). Newell *et al*. make reference to the value of epistemic justices, highlighting the methodological

considerations required to do so "the need to engage with novel and innovative participatory approaches to doing this so that hidden and undervalued perspectives and voices can come to the fore and concerns around epistemic and cognitive justice can be addressed" (2021, p. 12). Forsyth *et al*. forefront how engagement approaches can result in epistemic injustices if they are not thought through, "there is a need to consider not just the vulnerability or lack of recognition, of marginalized groups, but also their role as epistemic subjects. What work is their inclusion and participation seeking to achieve?" (2022, p. 6).

Perhaps due to the relatively nascent presence of epistemic justices within the interpretations of climate justice, ideas of how to empirically engage with it are less developed. Joy *et al*. argue that their interpretation of justice should focus on "the realities of injustice as experienced by the politically oppressed, the culturally discriminated, and the economically exploited, and relating them to local perceptions of equity and to more universal and hegemonic discourses, constructs, and procedures of formal justice" (2014, p. 965). Newell *et al*. also centre lived experience, and in line with Visvanathan's ideas of cognitive justice, hold the possibilities of plurality, "there is also a strong case for pluralizing climate knowledge and recognizing the value of experiential and lived knowledge of those at the forefront of climate justice struggles" (2021, p. 9). Tschakert *et al*. call for transformative climate justice "to bear witness to unseen experiences and make space for otherwise silenced voices" (2021, p. 7). All these accounts hold epistemic justice as important, but do not provide details how to translate that into practice.

Furthermore, these considerations raise questions relating to how the researcher can identify who is at the 'forefront', especially if particular voices are often silenced through various epistemic injustices. It seems that this has two methodological implications, first to seek out the normally silenced (in this case is those affected by flooding) and ensure that the methods do not discriminate. Secondly, during this process, in order to avoid others being unintentionally shut out, it may be relevant to 'bear witness' to experiential accounts and 'make space' for unanticipated knowledges to present (Tschakert *et al.*, 2021, p. 7).

Connected to experiential knowledge is the importance of context since experiential knowledge is developed from situated experiences and understandings. Thus, "understanding how diverse people experience and define justice within a specific context, history, and time" (Joy *et al.*, 2014, p. 965) has an impact on what interventionsw may be taken. Taking this further, conceptualisations of aspects of central climate change issues (such as vulnerability, justice, climate change, risk, adaptation) used in different places may impact on the experiences of people affected.

2.3.2. Justice as recognition

If epistemic justice is concerned with 'whose knowledge counts', recognition is concerned with 'which people (and what types of their knowledge) is recognised'. For example, the difference could be illustrated by a community group being *recognised* as having a legitimate place in a policy making process, but their emotional responses being ruled illegitimate (due to the wrong kind of knowledge,) and any technical expertise they had ruled out as being held by the wrong people. Epistemic justice is about the underlying knowledge frameworks that are valued, while the latter concerns who is invited to contribute to policy making and action, although there are clearly overlaps between the two.

Justice as recognition is widely used across interpretations of climate justice, and is often cited as a response to the critique of distributive justice-related failures to account for processes which omit a recognition of people or things (Holifield, 2012). Walker states how recognition seeks to overcome "cultural and institutional processes of disrespect, denigration, insult and stigmatisation, which devalue some people in comparison to other" (2009, pp. 925–926). Burnham *et al*. characterize recognition as consisting of rights for cultural and social groups confronted with climate impacts (Burnham *et al.*, 2013), which Newell elaborates as especially important, "given the uneven capacity to exercise and defend rights" (2021, p. 5) across society. This emphasis is vital when considered alongside Forsyth and McDermott's observation that, "Movements such as Black Lives Matter have highlighted how marginalized groups can be excluded from rules and practices seeking to build social justice" (Forsyth and Mcdermott, 2022, p. 1) – in other words, how some groups are not recognized as part of particular movements or decisions.

Interpretations of climate justice commonly employ justice as recognition to identify "social and political misrecognition as the key underlying condition of the maldistribution of goods and risks" (Schlosberg, 2012, p. 446). The social element of (mis)recognition relates to individual identities and the political (mis)recognition refers to institutional assumptions about social status (Holifield, 2012). Recognition constitutes practice(s), such as where and how people recognise themselves and are recognised. In this sense, recognition can also be considered relational since it occurs *between* people and things. Tschakert *et al*. highlight this as they call for an intersectional approach which "recognizes the simultaneity of identities and categories of difference and inequalities (race, class, gender, age, ability, species, and beings)" (Tschakert *et al.*, 2021, p. 5). Schlosberg also builds on relationality, more broadly considering the importance of recognising the role of the natural worlds in our experiences of them, especially when it comes to climate change (Schlosberg, 2012).

It follows that recognition (or lack of) takes place from a particular standpoint, be it academic, policy actor, institution, or individual, and the act of recognising emerges from a particular understanding of who or what is or is not recognised. Moreover, there is no way of the 'unrecognised' being able to make themselves known, as the decision is taken by the 'recogniser'. Oliver highlights these critiques and offers a response of 'witnessing', which she describes as "a commitment to the truth of subjectivity as addressability and response-ability" (2015, p. 485). In emphasising the situated knowledge of the actors within recognition, it is possible to overcome the critique of who is or is not recognised by using an approach to recognition which can critically reflect upon the decisions made about recognition by considering the lived experiences of those making the decision.

Recognition requires critical considerations, raised by Oliver (2015, p. 485), regarding who gets to make decisions about recognition and what their standpoint is, and the "the point of recognition is for the previously discriminated against, derided, or ignored to gain participatory parity" (Schlosberg, 2012, p. 452). In this way, recognition can be seen as a precondition for procedural justice and builds on an appreciation and valuing of experiential (epistemic) justice.

2.3.3. Procedural justice

Procedural justice embodies the notion that just distributions arise not only from recognition and distributive frameworks, but the processes that tie them together (Joy *et al.*, 2014). Such processes speak to geographies of power and decision-making (Holifield, Porter and Walker, 2009). If the aims of justice are achieved through processes rather than 'tick boxes', analyses of power are key to the longevity and ongoing nature of justice (Miller Hesed and Ostergren, 2017). Where justice as recognition may consider who is participating, procedural justice could present as forms of how participation works (Burnham *et al.*, 2013), considering *how* participation works. In addition, procedural justice is concerned with the extent to which processes are transparent and understanding how much procedure changes engage with reflexive decision-making. Concerns regarding procedural justice include the idea of 'deep' participation (Forsyth and Mcdermott, 2022), which challenges the idea that all participation is good participation. In sum, procedural justice inquiries involve casting a critical eye on processes which claim to include people, but may simply pass on responsibility (for more on flood governance and responsibilisation see e.g. Moon *et al*., (2017)).

Procedural justice is included across interpretations of justice in different ways and for different purposes. For example, procedural justice can be considered the means to an *end goal* of fair distribution, which "can only be achieved if all affected parties are involved in an equitable decision-making process" (Burnham *et al.*, 2013, p. 2). In contrast, procedural justice is also considered as constituting justice in itself, that just *processes,* concerned questions of "who should take decisions

over what, by what means and on whose behalf" (Bulkeley *et al.*, 2013, p. 917). Just procedures are considered to "regulate the distribution of goods and having transparent and accountable decision-making processes in place" (Newell *et al.*, 2021, p. 4). The former example places emphasis on the final distribution, such as climate risks, whereas the latter two suggest that just processes lead to just outcomes.

Considerations of procedural justice include consideration of disagreements, as a key aspect of decision-making processes. Building on the importance of disagreements, Tschakert *et al*. draw attention to the relational nature of processes and the power structures that shape them (2021). Following Crenshaw (e.g. Crenshaw, 1991), they encourage the use of an intersectional lens to take account of "interlocking ... structures and processes of injustice and oppression" (Tschakert *et al.*, 2021, p. 5). Thus, intersectional deliberation within decision-making "may recognise and work with disagreement to facilitate more honest – but nonetheless more inclusive – debate on injustice" (Phillips *et al.*, 2022, p. 13). Increased inclusivity and embracing of different types of epistemic knowledge may also "move us beyond narrow technocratic and neoliberal solutions to climate change by opening up novel spaces" (Tschakert *et al.*, 2021, p. 6). Thus, disagreement among different voices may lead to difficult conversations, but could ultimately offer the space to imagine beyond current paradigms.

There is also a temporal element within procedural justice, regarding how processes develop and iterate over time. Walker notes how transparency can facilitate processes of "procedural fairness … creating open rather than constrained networks of interaction and deliberation" (Walker, 2009, p. 628). Considering the sensitivity of climate justice to situatedness and experiential knowledge, practises of learning, agreeing, and disagreeing become vital. Interventions which lack this may contribute to existing injustices, a phenomenon understood as maladaptation. This can point to a lack of reflexivity regarding initial assumptions, such as defining climate risk, as "there is also a need to consider how unquestioned scientific explanations can also exclude or organize these voices when they are used as fixed circumstances of justice" (Forsyth and Mcdermott, 2022, p. 5). In order to avoid maladaptation, the authors suggest 'deep co-production'; a process of recognising vulnerable actors as epistemic subjects whose experiential knowledge is vital to collective and democratic processes of responding to climate impacts.

In addition to learning from context-specific decisions, Joy *et al*. (2014) argue that climate just interventions stem from the situation where they are considered, including the local context, knowledges, values, and perspectives. Situated understandings of particular challenges, such as flooding, can provide a point from which to locate common ground, although these understandings

can be flawed and inconsistent (Joy *et al.*, 2014). Thus, a challenge of procedural justice pursuits is including a wide range of actors and views while simultaneously balancing claims that are far-fetched or untrue.

2.3.4. Distributive justice

Distributive justice is the most established of the tenets considered. Unequal distribution of environmental harms played a key part in developing environmental justice (McCauley *et al.*, 2013). The tenets discussed above have often featured in addition, to address perceived shortcomings with distribution alone. Many interpretations of climate justice which critique the 'classical' approaches to theories of justice, such as utilitarianism, libertarianism, and egalitarianism, and focus on the distribution of things (e.g. goods, risks, harms) across society (Roemer, 1996). While important to the development of justice theory, classical, often liberal, theories of distributive justice on their own are broadly considered outdated and insufficient when it comes to thinking through climate justice (Walker, 2009).

Moving away from classical approaches to distribution, numerous interpretations (Schlosberg, 2012; Burnham *et al.*, 2013) of climate justice engage with Sen's (1985) capabilities approach, especially in the form developed by Nussbaum (2000). In contrast to distributive considerations which focus on 'who gets what', the capabilities approach places an emphasis on the "actual effect of … distributions on people's overall well-being" (Burnham *et al.*, 2013, p. 7). In this sense, the capabilities approach can cope with the, often intersecting and compounding, issues that climate impacts can cause. Sen's original theory for capabilities was intentionally non-specific, since he claimed that the factors required to live a flourishing life should be determined by individuals themselves. Nussbaum built on this theory but took the stance that there are ten capabilities which might be useful for anyone, without universalizing expectations about what people need or want. Table 2-1 below details the capabilities that people (Nussbaum) should have access to, to live a flourishing life.

Table 2-1. Nussbaum's list of capabilities (2000)

	Capability	Description
1	Life	Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.
2	Bodily Health	Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.
3	Bodily Integrity	Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.
4	Senses, Imagination, and Thought	Being able to use the senses, to imagine, think, and reason—and to do these things in a "truly human" way, a way informed and cultivated by an adequate education. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by

		guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid non-beneficial pain.
5	Emotions	Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger
6	Practical Reason	Being able to form a conception of the good and to engage in critical reflection about the planning of one's life
7.1	Affiliation	Being able to live with and toward others, to recognize and show concern for other humans, to engage in various forms of social interaction; to be able to imagine the situation of another
7.1		Having the social bases of self-respect and non-humiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of non-discrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin and species
8	Other Species	Being able to live with concern for and in relation to animals, plants, and the world of nature
9	Play	Being able to laugh, to play, to enjoy recreational activities
10.1	Control over one's environment: Political	Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association – directly links to participation
10.2	Control over one's environment: Material	Being able to hold property (both land and movable goods) and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers

Across several versions of climate justice, the capabilities approach demonstrates an ability to understand multiple personal impacts on everyday life. For example, in a flooding context, issues regarding 'bodily health' may be indicated by experiences of living in damp houses, or with high levels of stress. It is arguably this flexibility that makes the capabilities approach so widely used in climate justice frameworks (e.g. Doorn, Gardoni, & Murphy, 2018; Gardoni & Murphy, 2010; Holland, 2008; Joy *et al*., 2014; Schlosberg, 2012). Benefits of applying the capabilities approach are claimed to include the ability to address non-tangible damage (Doorn, Gardoni and Murphy, 2018), and the ease of applicability resulting from indicators (Holland, 2008; Schlosberg, 2012; Burnham *et al.*, 2013; Steele, Mata and Fünfgeld, 2015).

Once again, moving from the theory to practise of distributive justice is a challenge and there are differing ideas about how to approach and 'measure' capabilities, and what would empirically indicate 'enough' of each of them. It seems that there is additional complexity given that what constitutes flourishing may look very different across different people and communities. Thus, the core similarity underpinning a consideration of capabilities rests on the subjects to whom the capabilities are considered. Bringing in epistemic justice, subjects know what is best for them. Relatedly, further discussions explore ideas of subsistence and luxury. These considerations explore

whether there are clearly agreed amounts of 'just enough' flood protection and whether than can be too much flood protection. These queries require consideration (e.g. see Schlosberg (2019), but are not relevant in this work, which is concerned primarily with understanding what a climate justice framework for flooding in England might look like.

Considerations of context are also brought into the capabilities approach, in particular by Holland, who posed that the wider context, specifically "certain environmental conditions are necessary for producing and sustaining these material things, and indeed for making all human capabilities possible" (Holland, 2008, p. 320). Thus, Holland proposes the addition of a 'meta-capability' to underpin Nussbaum's list. This thesis is founded on climate justice, and the necessary consideration of climate impacts. While Holland's contribution may valuably bring in a climate lens to other applications of the capabilities approach, considerations of the environment are embedded within the climate lens of this research.

Distributive justice is applied across different scales. For example, Schlosberg (2012) favours the potential for the capabilities approach for policy use in identifying collective needs and emphasizes the importance of recognition in order to achieve this. Bulkeley *et al*. noted the distribution of rights and responsibilities inherent to the global scale, "where questions of allocation and distribution are framed in relation to the nation-state" (Bulkeley *et al*., 2013, p. 917). Newell *et al*. incorporate a temporal scale to their analyses of distribution, noting how distributions of the present are linked to "a historical understanding of place-based movements" (Newell *et al*., 2021, p. 7). The considerations of scale in relation to distribution expose how distribution happens across space and over time and are unlikely to reflect neatly bounded exchanges. Rather than focus on one 'snapshot' of distribution, I return to the offerings of the capabilities approach as a means to monitor flourishing across places and times.

2.3.5. Interactions between the tenets

Many of the interpretations of climate justice employ the tenets individually with an awareness that they are also deeply entangled. For some, recognising the entanglement aims to enrich an overarchingly distributive agenda, "we think it is important to add dimensions of (cultural) recognition and procedural democracy to this focus on (re-)distribution" (Joy *et al*., 2014, p. 967). Burnham *et al.*'s interpretation of climate justice includes the three tenets without ascribing a hierarchy, "[while there are] clear distinctions between distributive and procedural justice, they are interdependent in the production of just climate outcomes" (Burnham *et al*., 2013, p. 8). I propose that in the aim of understanding what is important to people affected by climate impacts in England,

it is most appropriate to be aware of the interactions and reflect upon whether there is a hierarchy among the tenets or whether they are interdependent at the end of the investigation.

Figure 2-1 illustrates the interconnected and iterative nature of the trivalent interpretation of climate justice. In particular, as highlighted in Siders' graphic, justice as recognition is linked through the processes of decision making whereby a procedure could be considered just in itself, although if considered alongside recognition it may become evident that certain voices are missing. In addition, the way that people are engaged in a process may lead to uneven distributions, such as if participation is only encouraged in areas that particular people can access, or during work hours etc. It does not include epistemic justice, but there are clear links between epistemic justice and the other tenets, including *how* people are recognised and whether that includes as 'experiential experts'. Other overlaps have been discussed above.

The tenets are not effective at addressing climate injustices on their own. Tenets are not offered as alternatives to one another, but as complementary strands, or components, of an intended holistic approach to 'climate justice'. Tenets focus on different aspects of the whole and interlink to offer complex and valuable insights. Some combinations are well established, such as the 'trivalent' nature of climate justice, composed of recognition, procedural justice, and distributive justice (Schlosberg, 2004; Walker, 2009; Joy *et al.*, 2014; Forsyth and Mcdermott, 2022). However, as mentioned above, epistemic justice is relatively nascent in climate justice interpretations when

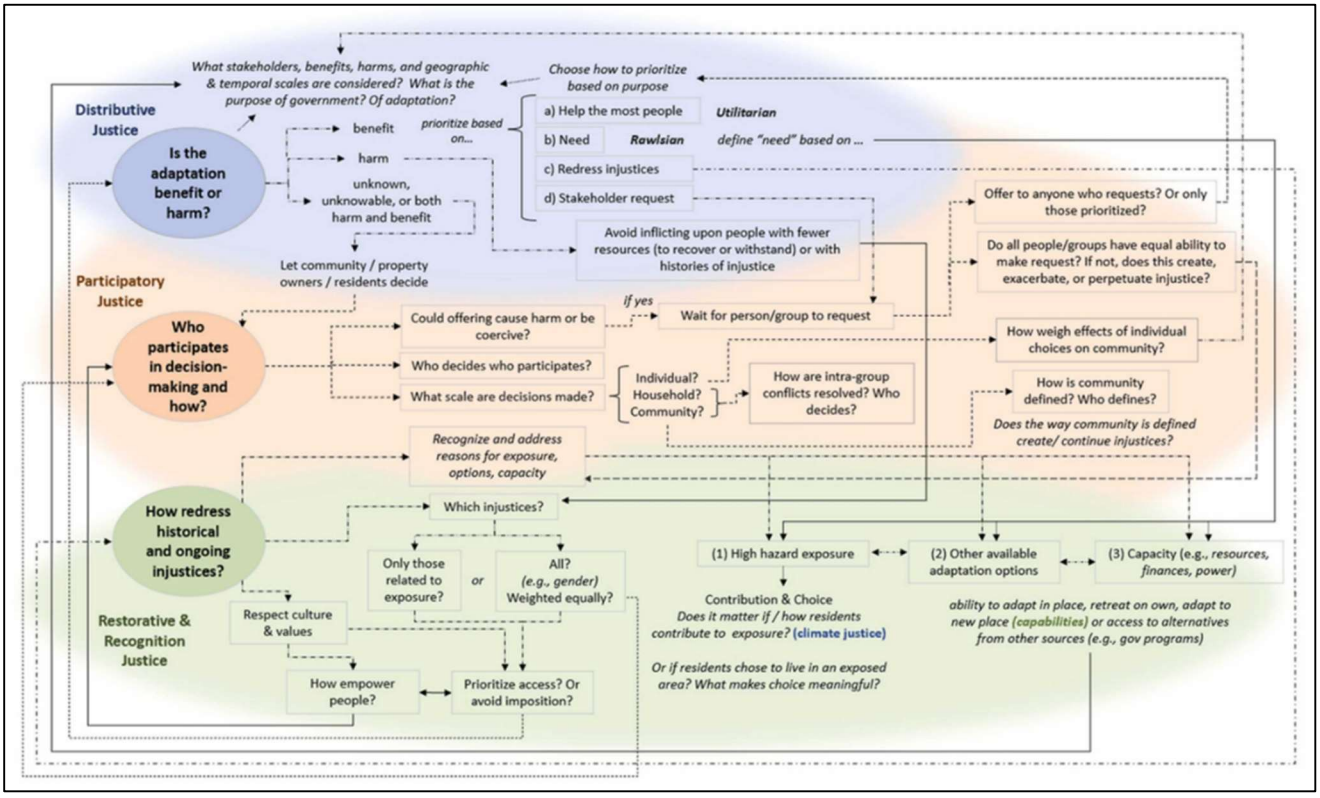

Figure 2-1 Siders' overview of decisions involved in justice considerations for climate adaptation (Siders, 2022, p. 283)

compared with the other tenets. There is merit in including it in a climate justice framework, due to positioning people affected by climate change as experts in their experiential knowledge. It also adds agency to people affected, without it having to be ascribed through justice as recognition or procedural justice.

2.3.6. Cross cutting themes

Considerations of scale, and rights and responsibilities, can be considered as intersecting across the four key tenets of climate justice. Scalar considerations appeared to crosscut tenets of climate justice since, despite locating particular investigations of climate justice in a context, it is evident that the effects of (in)justice spans both local and global destinations, and across time tracing from the past to influence people in the future. Rights and responsibilities can be considered alongside each tenet of climate justice to consider what the implications of it are. For example, such a consideration prompts investigations of who bears responsibility both for causes and for actions.

Scales of Justice

Each tenet explored how scale presents within interpretations of climate justice, whether spatial, temporal, or considerations of both (Holifield, Porter and Walker, 2009). Thinking through the effects of scale adds an appreciation for the many different scales across which (in)justices span and includes both spatial and temporal scales.

Spatial scales

Walker (2009) traces intersections between spatiality and environmental justice to explore how injustices can manifest spatially, shaping where injustice(s) occur and how they are considered, since it is within spatial arenas that injustices are witnessed. Therefore, the scale and boundary of the inquiry informs how justice can be considered. For Burnham *et al*., questions of scale delineate particular boundaries around how justice implications, such as 'winners and losers', can be considered (Burnham *et al.*, 2013). Further, Joy *et al.* posit that scalar differences between abstract or universalising theory and situated experiences could lead to problematic interactions, with "justice at one scale sometimes implying injustice at another" (Joy *et al.*, 2014, p. 969). Joy *et al.* note how climate change impacts transcend political and administrative boundaries, connecting times and places in a history of injustice. Other examples focus around the social scale of the injustice, for example the interpretations of justice which emphasise a move away from liberal and individual interpretations of climate justice towards collective and entangled ones (Schlosberg, 2012; Tschakert *et al.*, 2021). Even within discussions of spatial scale, there are a range of approaches regarding: the scale of the justice theory, the scale of the climate impacts, the scale of experiences of injustice, and the interacting nature of justice across scales.

Temporal scales

Scales of temporality arise in tenets of climate justice in two ways. The first relates to the temporal legacy of the climate impact, and the second highlights injustices as they might affect others over time. Firstly, building on Walker's work, Bopp and Bercht develop spatial scales to argue for the inclusion of scales of time as able to enrich interpretations of climate justice (Bopp and Bercht, 2021). The temporal element of climate impacts is highlighted in Forsyth and McDermott's work on encouraging reflexivity within the conceptualisations of how particular climate risks may be differently understood by the people that experience them and policy definitions (Forsyth and Mcdermott, 2022). An emphasis of space-time entanglement and a critical awareness of 'eventness' (Meriläinen and Koro, 2021) can help to elucidate how people affected by climate change impacts can continue to experience ripples of the impact after official institutions may have declared it finished. Considering temporality in this way can reveal the deep shifts that climate impacts can leave on lives and shape the way that future events are experienced.

Turning to considerations of justice over time, Tschakert *et al*. highlight Yusoff's (2019) work which emphasises the requirement to learn from the past in order not to reproduce injustices, arguing that focusing only on the present "obfuscates long-lasting struggles for justice that predate the unease of the privileged coming to grips with dangerous climate futures" (Tschakert *et al*., 2021, p. 4). Not only is a climate justice based only in the present a way of erasing non-dominant histories, it also ignores a rich history of struggle and movement(s) which have much practical application in a politics of climate justice.

Another consideration of time is justice for future generations. We are now experiencing climate change due to impacts of carbon emitted in the past, and future generations will experience climate change impacts due to carbon emitted today. Newell *et al.* claim that "justice to future generations is a central mobilizing claim: holding the current generation of decision-makers and polluters to account now for failing to act … as well as protecting future generations from harm" (Newell *et al*., 2021, p. 6). Intergenerational justice is established in other concepts of justice, such as indigenous theories and aligning Tschakert *et al*. above, which emphasize our location in a moment of deep time.

Thinking about scale is embedded in climate justice because injustices do not occur neatly bounded or nested in place or time. However, it is methodologically challenging to know before an inquiry how spatial or temporal scale may emerge or manifest. Thus, it is beneficial to reflect upon scales after exploring tenets of justice.

Rights and responsibilities

Rights and responsibilities can be differentiated as: rights are 'things' that subjects are entitled to, and responsibilities are 'things' that particular subjects or institutions are obliged to do. In the climate justice interpretations, they are often discussed alongside one another.

Rights and responsibilities have been discussed at a global scale when considering climate mitigation, such as how to decarbonise global energy systems (Burnham *et al.*, 2013; Bulkeley, Edwards and Fuller, 2014). The parallel theme is used, alongside governance frameworks, to protect the rights of certain states (e.g. the global south) to certain qualities of life while acting to ensure other states (e.g. the global north) are held responsible for their historically damaging actions (Caney, 2014). This demonstrates that rights and responsibilities are relevant to climate justice despite there being fewer examples of their consideration in climate adaptation.

Climate justice frameworks at an adaptation level encompass rights and responsibilities by discussions of justice, with scholars claiming speculative rights; such as rights to recognition, (Joy *et al.*, 2014), the right to be protected from (dangerous) climate change (Burnham *et al.*, 2013) and processes of distributing rights. Schlosberg embeds rights and responsibilities, arguing that the "expansion of the human rights framework for climate justice to encompass such basic needs is clearly compatible with the capabilities approach" (Schlosberg, 2012, p. 449). Therefore, while rights and responsibilities can be considered alongside tenets of climate justice, they are also sufficiently addressed in a climate justice framework which includes the capabilities approach.

2.4 Establishing a tentative climate justice framework for investigating flooding in England

Drawing on discussions from the previous section, a climate justice framework for investigating flooding in England is presented in this section and is constituted by four core tenets of justice: epistemic justices, justice as recognition, procedural justice, and distributive justice (specifically the capabilities approach). These tenets can all be brought together, drawing from different interpretations of climate justice, as a climate justice framework for investigating flooding in England. Reflections of spatial and temporal scale contextualize the framework. Rights and responsibilities spotlight what people are entitled to and suggest how responsibilities should be considered and are embedded within the capabilities approach, so not considered separately. This section will translate the theoretical discussion of the tenets to a framework which will be operationalized throughout the thesis for investigating flooding and flood governance in England.

The next paragraphs reflect on how each tenet may relate to the application of climate justice in this thesis: investigating flooding and flood governance in England. The tentativeness here is to

ensure that there is flexibility for the framework to evolve in response to being investigated and applied later in the thesis. Since the next chapter will delve into the context of flooding in England, for the meantime I will reflect on the tenets usings the broad principle of climate justice discussed above - the (people) most affected by climate change are: the least responsible for climate change, and have valuable knowledgeable about living with climate impacts, and have the least capacity to respond.

Epistemic Justice

Epistemic Justice is a central tenet for interpretations of critical climate justice, and emphasises the value of lived experience for shaping new ways of responding to climate change (Tschakert *et al.*, 2021). It is important for ensuring that systems and processes are not excluding voices through presuppositions about who can be trusted based on identity (Fricker, 2007) and knowledge 'type' (Visvanathan, 2009). As discussed above, there is a methodological challenge to identify whose voices are silenced, precisely because those voices are silenced. Furthermore, the calls for lived experience to influence conceptualisations of climate risk(s) and injustices require that epistemic justices are ensured in order to include and learn from accounts from 'those most affected' relating to their knowledge of living with climate impacts. Epistemic justice in this thesis will be explored through the following reflections:

- What types of knowledge do people have from being affected by flooding?

Justice as recognition

Justice as Recognition is concerned with ideas about who is considered, or *recognised*, to be affected by a certain impact, in this case flooding in England. In this thesis, a recognition lens seeks to uncover the ways that actors and institutions can fail to, or incorrectly, recognise certain groups. Questions guiding considerations of justice as recognition include:

- Which (groups of) people are recognised (or not) in flood governance, and how?
- Who are gatekeepers of recognition?

Procedural justice

Processes underpin government policy and delivery, including flood governance, therefore including a tenet of procedural justice within the interpretation of climate justice is vital. In addition, there is a strong emphasis on the ongoing nature of climate impacts, as exacerbated both by anthropocentric emissions and a lack of just adaptation measures. Thus, all climate impacts and injustices can be linked to processes resulting in particular distributions and founded on assumptions about valid sources and types of knowledge. Furthermore, the processes are not static but evolve and

iterate to fit wider contexts. Learning from elsewhere becomes vital for avoiding maladaptation (Forsyth and Mcdermott, 2022).

This approach to learning from experience has two key implications for the climate justice framework: firstly, recognising who can learn and from which combinations of experiences it is valid to learn; and secondly, a procedural concern of where in the flood governance process learning can be incorporated. In addition, there are implications for not only how flooding is conceptualised, but also conceptualisations of flood governance as constantly evolving, morphing, and reflecting on previous experiences.

Questions guiding considerations of procedural justice include:

- What kind of ways are people involved in flood governance?
- How transparent is flood governance?
- How is learning incorporated within flood governance?

Capabilities approach (distributive justice)

Whereas Justice as Recognition and Procedural Justice focus on the governance structures of flooding, discussions of distributive justice, specifically the capabilities approach are concerned with how climate impacts, in the case flooding, are experienced. A capabilities approach facilitates an understanding of how different people's wellbeing is affected by flooding through the consideration of the ten capabilities suggested by Nussbaum. Important considerations here relate to the temporality of a flood, and how capabilities may be impacted in varying ways at different points throughout the flooding experience. Questions guiding an analysis of the capabilities approach in this thesis include:

- How does flooding impact peoples' capabilities (Life; Bodily Health; Bodily Integrity; Senses, Imagination and Thought; Emotions; Practical Reason; Affiliation; Other Species; Play; Control over one's environment)?

Considerations of scale

From the discussion above, it is evident that consideration of spatial and temporal scales is vital in order to not reproduce injustices elsewhere, but the lack of explicit frameworks for considering spatial scale(s) suggest scales of time and space are best considered as cross-cutting themes that runs throughout the climate justice framework. Scale will be discussed as below, where and when themes of space and time arise.

- Do considerations of spatial scale elucidate additional understanding of climate injustices?

- Do considerations of temporal scale elucidate additional understanding of climate injustices?

2.5 Conclusion

The interpretation of climate justice for investigating flooding in England is depicted in Figure 2-2. Based on the appraisal of existing interpretations of climate justice, this framework embraces the four core tenets of justice as recognition, procedural justice, the capabilities approach, and epistemic justice. The tenets are not necessarily equal in weighting, and the arrows between them depict that I expect some interactions in the context of investigating flooding in England, although the types and extent of interaction is unclear. This will be reflected on, throughout the operationlisation of the framework. While the four core tenets can be considered to investigate different parts of the whole, they also have specific contributions, which are illustrated through the different images. The images show the landscape and people and a microphone and scales: the former pair show who is affected by climate justice considerations, the latter pair show some of the means through which those affects are enacted. The icons of the ruler and the timer represent how reflections of spatial and temporal scale provide additional context when applying the framework.

Recognizing the dynamic nature and situatedness of climate impacts, the framework is intended to be malleable: offering a common language to people affected by flooding or as a set of values to guide professional allies. This climate justice framework is not intended to be presented as a fixed tick list; the intention of the framework is rather that these tenets provide a starting point from which a politics of climate justice for climate adaption in England can iteratively evolve.

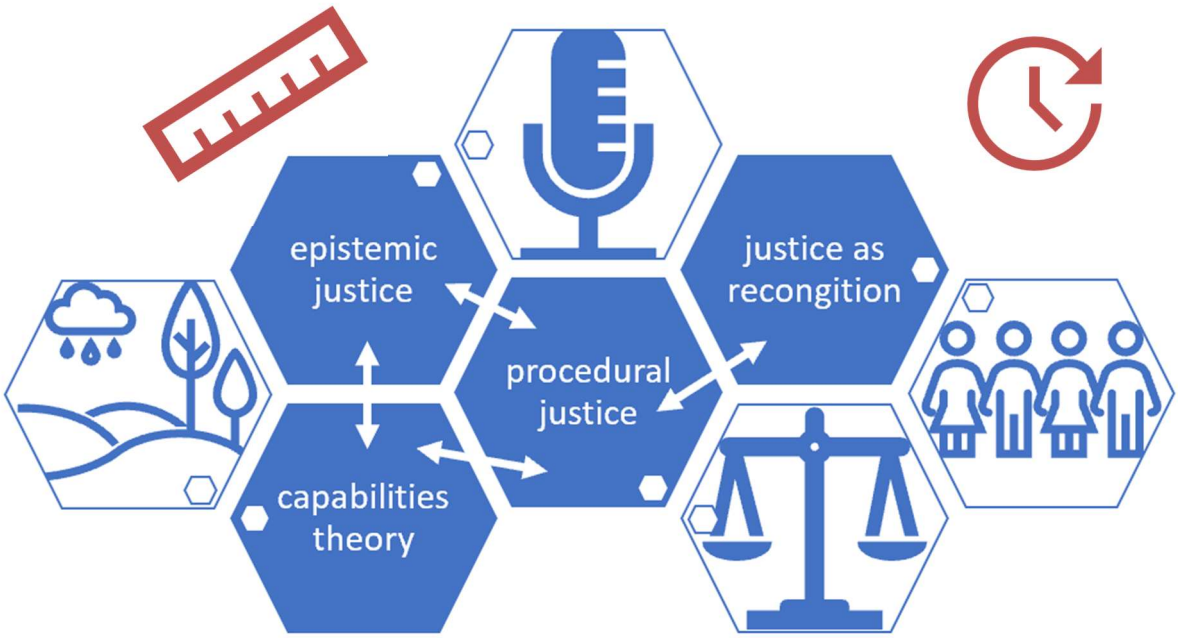

Figure 2-2 Tentative climate justice framework for investigating flooding and flood governance in England

When engaging with debates around climate justice, I have found it useful to draw on Ahmed's idea of a 'sweaty concept' - a concept which can be used to describe the work (and sweat) involved in 'the practical experience of trying to transform a world' (Ahmed, 2016, p. 14). The emphasis in this project is on the 'trying' – recognizing the necessarily iterative, contextual, and collective process. Over time, the framework should be shaped by the many people who experience flooding or flood risk in England. This shared effort emphasises the importance of collective transformational efforts to living with climate change. Importantly, this framework neither imagines discussions and decisions as easy, simple procedures, but tussles of information exchange and compromise which are centred on respect and care.

Each element of the framework is not without criticism or complexities. For example, who or what should be recognized as important is necessarily subjective so requires diligent consideration and reflexivity, especially concerning power dynamics. Similarly, procedural justice may look very different for different people depending on how much individuals want to be involved or expect the state to act for them. A critique of the capabilities theory is the issue of universalism (also seen as a colonial power), although on closer inspection, the capabilities claim to neither be concrete or particularly restrictive. Nussbaum, in her list of ten capabilities (2000) has indicated broad categories, e.g.. the right to life, which can be universalised without being contentious, whereas others such as 'political agency' may look very different across different contexts. These critiques will be returned to during the operationalisation of the framework and thesis conclusion.

The remaining chapters of the thesis will work towards operationalising and reflecting on this climate justice framework. This will involve overlaying theoretical ideas of climate justice alongside the empirical findings to see to what extent themes arising from the empirical work align with the climate justice framework. As will be discussed in the Research design and methodology, the justification for a 'ground up' comparison is to see if empirical findings yield things not considered by the framework. The following questions will guide the evaluation of the climate justice framework in the conclusion:

- How do conceptualisations of flooding fit alongside the climate justice framework?
- How might the framework respond differently when used by different people?
- How do each of the tenets interact (across contexts) and what are the implications of this for the framework?
- What might the framework be able to offer or achieve?

This chapter has presented the theoretical basis for the thesis. The next chapter will provide an overview of the context of flooding and flood governance in England and link climate justice to flooding conceptually. It will reflect on how the climate justice framework developed in this chapter may embellish existing nascent approaches to research flood governance or address shortcomings in the current literature.

Chapter 3 | Flooding, flood governance, and climate justice in England

3.1 Introduction

The aims of this chapter are two-fold. First, it presents conceptual and contextual ideas about flooding and flood governance in England. As discussed in the thesis introduction, this research takes place within the governance context of England, but it may be more widely transferable, which I will discuss further in the thesis conclusion. Secondly, this chapter highlights the overlaps between flooding and climate justice which forms the theoretical and conceptual foundations for this thesis.

Before introducing the different approaches to flooding research, I want to reiterate my motivations for research flooding in England. Taking heed of results published by the Climate Change Committee and the IPCC (e.g. UK Climate Risk, 2021; IPCC, 2022a), I am aware of the multiple (intersecting) risks that flooding poses to ecosystems, soil erosion, biodiversity, and other related areas. For this thesis, I am interested in how experiences of flooding might inform a climate just approach to flood governance in England, so I focus on experiences of flooding. I am particularly interested in experiences due to the impending increased prominence of flooding highlighted in this comment,

> "…however high we build our flood defences, unless we also make the places where we live, work and travel resilient to the effects of the more violent weather the climate emergency is bringing. It is adapt or die. With the right approach we can be safer and more prosperous. So let's prepare, act and survive" (Howard-Boyd, Environment Agency, 2021a)

In October 2021, Emma Howard Boyd, then Chair of the Environment Agency, declared that regardless of flood defence infrastructure, the time had come to 'adapt or die'. It is this sense of urgency facing us from flooding (and other climate risks) that underpins this research.

This chapter presents the conceptual position of flooding and flood governance in this thesis, discussed in Sections 3.2 and 3.3 respectively. The final section, 3.4, highlights the links between the flooding and flood governance literature and climate justice. The chapter concludes by highlighting the implications of this chapter and turning to methodological considerations.

3.2 Conceptualisations of flooding in literature

This section focuses on how flooding is conceptualised in academic literature, drawing heavily on water governance, flood risk management, and disaster studies literature. This section presents a range of approaches, since "the very definition of being flooded is contested" (Walker *et al*., 2011, p.

2318). These contestations are important because the framing of flooding influences how it is looked at and restricts what the findings can be. This section discusses the literature by engaging with five different aspects of flooding research *approaching, producing, situations, experiencing*, and *enduring flooding*. In the *approaching flooding* subsection, I explore how flooding research is approached by scholars. The *producing flooding* subsection considers where flooding research comes from, and how floods are conceptually produced in the literature. *Situating flooding* speaks to how literature discussed the people and places affected by flooding. *Experiencing flooding* highlights how flooding may lead to multiple separate and overlapping impacts, which is developed in the *enduring flooding* which discusses how, while floodwaters may recede, the consequences often last much longer. The section concludes by presenting the conceptualisation of flooding employed in this thesis.

3.2.1. Approaching flooding

Flooding is highlighted as of global, national, regional, and local, interest due to being a phenomenon which can cause disruption and damage in many ways. There is concern about the impact of climate change on flooding, especially with regard to projected increases of precipitation. Flooding is approached as a concept from multiple perspectives, for example, technical, social, and environmental.

Research on flooding holds global significance, since "Floods are the most frequent and widespread natural disasters worldwide" (Kuller, Schoenholzer and Lienert, 2021, p. 1). In addition to global disruption, with "over 200 major floods documented in the last two decades" (Rollason *et al*., 2018, p. 1665). Furthermore, scholars note how flooding is the most serious "natural" hazard in England (Williams *et al.*, 2017), which is expected to increase in frequency and intensity (Cologna, Bark and Paavola, 2017). Clearly, flooding research holds value in order to explore how to (in my case, justly) minimise the damage and disruption it is expected to (increasingly) have.

Changes in land use compound the ever-increasing flood risk arising from a changing climate. Rural land use practices such as afforestation, field drainage and agricultural intensification have been found to increase runoff rates of stormwater (Wheater and Evans, 2009), which can exacerbate the risk of all types of flooding. Furthermore, the construction of buildings in flood-risk places (e.g. floodplains) renders properties at a higher risk of flooding (Rözer and Surminski, 2020), while the reduction in permeable surfaces driven by urbanization increases the flow and thus volume of floodwater to properties at risk (Agyeman and Evans, 2004; Sayers, Penning-Rowsell and Horritt, 2018). The construction of new assets in areas of flood risk is a key driver of increasing flood risk (Rözer and Surminski, 2020). Many scholars are working to elucidate patterns of inequality produced in these processes (Surminski and Eldridge, 2017; Sayers, Penning-Rowsell and Horritt, 2018; Rözer and

Surminski, 2020), which complements the work of this thesis in investigating the experiences of people who have been impacted by flooding.

Climate change, specifically sea level rise and precipitation patters, is deemed to 'dwarf' the other factors leading to the increasing risk of flooding (Rözer and Surminski, 2020, p. 1). However, scholars also note the increase of exposure to flooding, for example farming practices and housing development in flood plains which increases exposure of residents to flooding (Fielding, 2018). Thaler *et al.* frame flooding in a disaster lens, and argue that there can be a compounding cycle, whereby "increasing disaster frequency is largely due to increasing exposure, and the resulting higher degree of vulnerability in floodplains" (Thaler *et al*., 2018, p. 305). Furthermore, they note that from these cycles, "dilemmas of justice emerge: some individuals and communities benefit from flood management whereas others lose" (Thaler *et al*., 2018, p. 305). While the impacts of climate change, such as precipitation, may not discriminate, it becomes clear how political decisions such as where construction is, or how investments are used, can shape who is affected by flooding.

Literature oriented to exploring social issues of flooding consciously moves away from understanding flooding only as a technical issue, questioning that it can be solved using a language of technicality, effectiveness and efficiency (Joy *et al.*, 2014). Rather, water 'problems' are conceptualised as socio-technical-environmental issues of political allocation shaped by the state (Joy *et al.*, 2014; Thaler and Hartmann, 2016), with social, spatial and temporal influences reaching outside the physical boundary of the water (Johnson *et al.*, 2008).

Although it has been found that social inequality is compounded by the distribution of flood risk within England (Johnson, Penning-Rowsell and Parker, 2007; Johnson *et al.*, 2008; Sayers, Penning-Rowsell and Horritt, 2018), the political nature of flooding and climate justice suggests that injustices are spread across governance mechanisms, such as decision-making procedures and treatment/assumptions made of particular groups of people. Understanding wider contexts and holding an awareness of other power struggles is important to overcome these, since there are concerns that inequalities relating to water can play out on existing lines (Joy *et al.*, 2014).

In addition to the politics and complexities within flood governance (discussed in more detail below), flooding can be impacted by external factors "such as transport, health, education, food production, drinking water provision, ecosystem services and so on" (Mehring *et al*., 2018, p. 110). This demonstrates how flooding does not happen in a vacuum but is shaped by and shapes wider social processes. In addition, while flooding may not directly have an impact on systemic inequalities, such as racism, classism, and sexism, some studies suggest that flooding is more likely to impact areas of deprivation (Walker and Burningham, 2011) and non-white populations (Fielding, 2018). The

research in this area is relatively nascent, but findings so far "highlight the systemic flood disadvantage experienced by those living in socially vulnerable neighbourhoods" (Sayers, Penning-Rowsell and Horritt, 2018, p. 350). O'Hare and White develop this understanding of inequality to additionally claim that the people who are most affected by flood risk can also be considered to have born the least responsibility for it (2018).

Research investigating flooding from socially centred perspective, such as climate justice, requires a sensitivity to consider: the climatic impacts of flooding; the kinds of things considered to be affected by, or exposed to, flooding; the ability and capacity of those things to respond, manage, and recover from flooding; and the relationship of flooding to external factors and systemic societal disadvantages. Furthermore, who is affected by flooding and how is "essentially dynamic, as a spectrum rather than a categorisation along which people can move as their circumstances change" (O'Hare and White, 2018, p. 393). The rest of the chapter will explore each of these aspects throughout the remaining sections of producing, situation, enduring, and experiencing flooding.

3.2.2. Producing flooding

Conceptualisations of flooding within the literature disrupt the idea that flooding is an objective phenomenon shaped by hazard-exposure-vulnerability theory. Alternative understandings position flooding as socially-produced disasters, which "comes into being in relation to the spaces that water occupies… the condition of being flooded is produced" (Walker *et al*., 2011, p. 2316). Walker *et al*. also acknowledge the pluralistic nature of the social production of flooding, whereby, as part of flood governance, flood governance actors may "draw a precise boundary to determine flood status, although, as in many other applications of such expertise, that precision is not absolute or uncontested" (Walker *et al*., 2011, p. 2316). This view asserts flooding as a phenomenon which is produced when water is in a particular space *and* when (certain) people decide it is has occurred, often as a result of governance or scientific definitions.

The framing of disasters also posits flooding as a socially produced phenomena, "A flooding crisis can be considered as a disaster: it is an extremely harsh collective experience, suddenly disrupting the regular dynamics of social functions and generating collective stress" (Meriläinen and Koro, 2021, p. 166). Through this lens, Valencio and Valencio highlight how the very definition of a disaster includes disruption, "social damage and losses are not the effects or consequences of a disaster but rather its own essence" (Valencio and Valencio, 2018, p. 408).

When investigated from a long-term perspective, "the unequal consequences of disasters, for people and places, tend to reflect the inequalities of long-term sociospatial configurations" (Meriläinen and Koro, 2021, p. 166). Such inequal long-term configurations include access to housing.

Fielding notes how at-risk housing stock may attract "the most vulnerable, especially new migrants, and those with the least access to resources and those least able to cope following a flood. The freedom to select where one lives obviously is a factor and unequal opportunity to choose to avoid an environmental hazard could be seen as an injustice." (Fielding, 2018, p. 118). The disaster framing of flooding incorporates a deep awareness of long-term inequalities and how disasters, such as flooding, can emerge most acutely in spaces where there is systemic inequality.

Mathur and da Cunha take a post-colonial view on the social construction of flooding, stating that the spaces designated as 'wet' and 'dry' are underpinned by a constructed understanding of land which is founded on ownership and control by (some) people. They claim that "water threatens land with rising seas, melting glaciers, increasing floods, and scarcity, it is as an "other" that has been placed across a line that we subject to artistic representations, scientific inquiry, infrastructural engineering, and landscape design with little attention to the act of separation and the geographic imagination that drew it into being" (Mathur and da Cunha, 2020, p. 139). It is not only flooding they understand as socially constructed but also the concepts of rivers and sea levels, presenting a general critique of the idea of water occupying a correct place at a particular snapshot in time. Instead, they posit that "Rain and other forms of precipitation are not assumed to fall to a surface as water that forms rivers that run to a sea. It rather deepens a wetness that is already everywhere, in the air, earth, flora, and fauna. This wetness does not flow as water does; it holds, soaks, blows, seeps, osmotes, and transpires, moving in nonlinear and emergent ways to ever-extending holdings of wetness, holdings that eventually become an ocean, an all-encompassing wetness in which there is no such thing as dryness" (Mathur and da Cunha, 2020, p. 139). This perspective replaces ideas of flooding with a concept of wetness, which is not an event or a phenomenon but a potential state of being for all things, which is non-linear and emergent. Wetness offers a deep-time perspective to water which does not limit it to wet or dry spaces, rather it embraces the dynamic and unpredictable nature of water flows. This conceptualisation of flooding offers a complete reorientation of how water is understood in our landscapes, and I will return to the potential of it in the conclusion.

3.2.3. Situating flooding

While there is evidence of systematic patterns in England relating to who flooding affects, such as those in areas of deprivation, local impacts are always specific to place (Penning-Rowsell and Johnson, 2015). To an extent, the experience of flooding can be collective (I return to this in a later subsection), since in large flood events many people within one locality may be affected. Quinn *et al*. highlight how "communities of locality often share place-related identities that are continuously developing" (2020, p. 578). When places are repeatedly exposed to flooding, communities can develop 'watery senses of place', whereby "living with water and 'water issues' (e.g. flooding) is part

of individual and collective narratives of self and place" (McEwen *et al.*, 2017, p. 15). Place and context play a significant role in the experience and should thus be considered in the management or response as well.

Identities relating to place and community can also serve to inform future experiences of flooding. Holmes and McEwen report how knowledge developed through experience, (or 'lay flood knowledge') recognises uncertainty and complexity which can "be adaptive and resilient in a way that is critical to the responses of the State" (Holmes and McEwen, 2020, p. 597). The authors not only highlight the value of experiences for responding to flooding, but also position the state as in opposition to this. The value of place-based experiential knowledge is also heralded by Gaillard as a methodology for researching disasters, such as flooding, "We should encourage local researchers who know best local contexts to study local disasters. Their 'own' disasters" (Gaillard, 2019, p. S16). However, structural inequality may also play a role in this, as people most affected by disasters may not have capacity beyond meeting their everyday needs, "Those deemed ''vulnerable'' might even be less concerned about extraordinary shocks than everyday risks, such as those related to livelihood security and physical infrastructure" (Meriläinen and Koro, 2021, p. 161).

Collective experiences, and thus knowledge, of flooding can be stored in memory and passed down through conversation and social relations. Such "embedded and embodied relations with memory [has] potential for actionable knowledge in understanding flood resilience in different settings" (McEwen *et al.*, 2017, p. 26). Furthermore, memories and understandings will be plural, due to the specific "physical, social, and spatial dimensions of disaster and the dynamic and complex way in which these dimensions intersect in relation to embodied human experience" (Williams *et al*., 2017, p. 77). Despite the (valid) reasons for plural accounts of flooding, "different readings of the flood history of an area may coexist and compete within one flood-prone community" (Puzyreva and De Vries, 2021, p. 1). If considered and included alongside technical and scientific flood models, such descriptions and memories of flooding may embellish understandings.

Despite locality and place having a significant impact on flooding, especially regarding who is affected and how it is understood and remembered, exact boundaries of flooding are fuzzy. This is in part because of "the slipperiness and contingency of the boundary between the water meadow and the flooded field, the car park full of puddles and the car park in flood" (Walker *et al*., 2011, p. 2316). As with the wetness concept, the seeping and transpiration of water is constant and minuscule; the moment when a 'carpark full of puddles' becomes a 'carpark in flood' is nonspecific and difficult to pin down: it may not be an important moment at all. Furthermore, while a particular locality may be affected, "the impacts of a flood have a much wider reach than the physical spread of the flood waters,

with serious effects on the relatives and carers of flooded residents" (Mort *et al*., 2018, p. 153). Since the impacts of flooding are dynamic and produced from the specific places, politics, people, and capabilities: they are best understood through direct accounts of people who have experienced flooding.

3.2.4. Experiencing flooding

Impacts arising from flooding include extended displacement, school closure and loss of life (Coulthard *et al.*, 2007; Convery, Balogh and Carroll, 2010; Whittle *et al.*, 2010; Walker *et al.*, 2011). This subsection discusses these in detail, and throughout this thesis, I will build on them using the capabilities approach presented in the previous chapter to open up possibility for the many ways that people's lives (and environments, e.g. Tschakert *et al.*, 2021) might be affected.

While there are accounts of community spirit and coming together around the moment of water inundation itself, scholars have exposed the potentially distressing and disruptive impacts on the lives of residents and communities that flooding can bring which are both non-linear and long lasting (Holifield, Porter and Walker, 2009; Whittle *et al.*, 2010; England and Knox, 2015). These impacts might take the form of financial burdens, physical and mental health issues, emotional tensions, and social breakdown (Whittle *et al*., 2010). Reports of individual experiences of flooding show that for many people it is a distressing experience that persists long after the floodwater recedes and life may never return to 'normal' (e.g. Butler, Walker-Springett, & Adger, 2018; O'Hare & White, 2018; Whittle *et al*., 2010). In addition, impacts of flooding can act to compound existing challenges already experienced within under resourced areas.

This literature recounting and exploring experiences of flooding reveals that flooding is a shared experience which can involve different emotions drawn out across time, involving many at once or changing feelings. Experiences of flooding indicate that the temporal and spatial boundaries of a flood are fuzzy (Whittle *et al*., 2010; Sposato, 2016). Flood experiences vary from individual to individual and can affect a wider range of people than those whose houses have been inundated, including local workers not in flood governance, wider family members, and previously flooded people. Furthermore, these experiences of flooding are shaped not only by the physical presence of floodwater but also the extent to which residents feel listened to or supported by flood governance actors (e.g. Walker *et al.*, 2011).

The collective nature of (some) experiences of flooding can provide a source of respite for managing flooding, "the importance of active belonging and relational capital in shaping respondents' sense of well-being, even as that well-being changes through the recovery phase following the flood event" (Quinn *et al*., 2020, p. 586). This may relate to the locality of flooding, but it could extend

further to a community of solidarity among people who have been affected by flooding. Collective experiences of flooding can offer respite to the disruption that people experience and meet the requirements of the flooded people as they change and morph throughout the 'recovery phase.

Many studies investigate the impact of flooding in homes, as internal flooding causes significant disruption. Mort *et al*. report how flooding can be particularly impactful in homes, since they can be spaces of "comfort, safety and identity, it can also signify danger and uncertainty" (Mort *et al*., 2018, p. 153). Their study found differential impacts of flooding across different groups, for example their study of children's experiences of flooding found that "the meaning of 'home' changed in different ways: hotel, family home, rented accommodation and 'back home' all have unsettling, shifted resonances... a sense of place which is insecure, threatened and vulnerable to future events." (Mort *et al*., 2018, p. 153). Flooding can therefore displace people while remaining in their homes, as the comfort and security of their houses is threatened by the worry of flood risk.

People do not all experience flooding in the same way, but this perspective also applies to the professionals who work within flood governance. Mehring *et al*. highlight how flood governance actors need to recognise that "flooding is not purely a single 'event', that it has long-term human impacts. That water in someone's home is only the start of flooding for the flood community. Without this understanding, managing an increasing and systemic risk like flooding will be challenging with flood actors all working along different trajectories" (Mehring *et al.*, 2021, p. 12). This indicates how flood governance actors may have a different, possibly also collective, experience of flooding. However, this experience is founded on responding to and managing flooding, rather than being directly affected by it.

Experiential accounts of flooding challenge the conceptualisation of flooding as an event which solely requires preparation and response before getting back to normal in that the experiences are non-linear, unpredictable, and vary especially depending on how many times the individual has previously experienced flooding. The prepare/respond model does not adequately account for collective or individual memory, and incorrectly assumes that a return to normal is always possible.

3.2.5. Enduring flooding

Temporality is recognised to be complex within flooding research "the very starting points of `disaster' vary, and nor is there a clear end point to recovery" (Walker *et al*., 2011, p. 2318). Defining the 'end' of the flood is more complex than simply once the floodwater has receded, and within some conceptualisations, the idea that there is an end to flooding can obfuscate the social impacts of flooding. Furthermore, who decides the end of the flood depends on their perspective and experience

of the flooding. This section will present some of the different discussions in the literature regarding flooding.

There are differing accounts of when a flood can be considered over. For example, politicians may claim that a flood is 'over' when it is physically gone, however this is not the experience of participants who may not necessarily feel an end or resolution, especially when someone else tells them to. The floodwater enters places and homes, disrupting the status quo before retreating invisibly and slowly, some accounts talk about the creep of damp throughout their houses for weeks after the water has been mopped up. This abstract, objective approach to flooding separates floodwater from the idea of it as socially produced, and temporally connected to previous governance decisions regarding investment and prioritisation. The abstract approach to time and space can result in residents not only have a bad experience with flooding, but also feeling that they have 'failed' in being flooded, because their experience of it should have ended when the event was deemed to end.

Walker *et al.* highlight how, after the floodwater has receded, resultant dampness can be considered a "'secondary flooding' [-] the physicality of the water of the flood takes the form of what we have called shadows, traces of water left behind whose status is indeterminate" (Walker *et al*., 2011, p. 2316). Some scholars also separate the end of the flood from the flood recovery process, highlighting how recovery for residents who have experienced flooding does not have a pre-determined end and is different for everyone (Medd *et al.*, 2014). Furthermore, they highlighted a lack of recognition of the recovery process within policy, and that it was considered to end "at the point where the legally defined contingency arrangements, provided for the affected community by its public authorities and agencies, diminish and where the less well-defined services provided by the private sector start" (Medd *et al.*, 2014).

Formal inquiries into understanding significant flooding events have be criticised for a general tendency "to isolate the climatic, technical and engineering dimensions of disasters in an effort to explain why flooding occurred" (O'Hare and White, 2018, p. 388). These approaches can reduce awareness and concern for the ongoing impacts of flooding, as they focus on aspects which have an end, rather than the complex social aspects. Bosher, Chmutina, and van Niekerk highlight how disaster events are commonly characterised as a cycle, consisting of stages such as preparedness, event, relief, and recovery, and they question the usefulness of the cyclical nature of disaster management "a cyclical process of actions… always involves a disaster … but results in yet another disaster. This may actually be a honest reflection of how disasters are often mis-managed and re-created" (Bosher, Chmutina and van Niekerk, 2021, p. 527). Gaillard highlights how this a nature of understanding disasters in policy can be understood to depoliticise the nature of disasters and mask how ongoing

choices about investment can render some people and places more vulnerable to them (Gaillard, 2019).

Table 3-1 summarises recorded floods since 1998, during which "five of the ten wettest years for the UK [since] 1836 have occurred" (Kendon *et al*., 2022, p. 3). The flooding goes back to 1998 since that is the earliest record of flooding in the Met Office archives (Met Office, no date). A scan of the flooding locations highlights how, although some areas do recur, flooding is not occurring in predictable patterns in the same location: it is an issue widespread across England (and the UK). Nor do the floods occur at the same time every year – each month is accounted for in the table below. The flooding summarised in the table occurs more frequently than it did in 1998, although there is not sufficient data to understand whether more people are impacted or not. An explanation for the apparent increase in frequency may be that the Met Office began to name storm events in 2015, whereas prior to this there are descriptions of stormy periods. This means that what might now be considered three storms may have previously been one stormy period. However, as discussed earlier, projections for flooding are expected to increase in frequency and intensity. The most common data indicating the impact of a flood is usually given in properties flooded or people affected, although the latter has only been included more recently beyond fatalities. It is also notable how policy developments, noted in the *Comment* column, often have a correlation of being introduced after a significantly disruptive storm event, such as the Water Act 2010 after flooding in 2007 which flooded 55,000 properties.

Flooding has presented persistent governance challenges since (at least) 1998. In addition to the data presented in Table 3-1, it is key to take note of the data which is not there. Table 3.1 provides a summary of flooding according to Met Office records, which capture large disruptive floods rather than smaller ones. This picks up on the idea at the beginning on this subsection about who gets to decide when a flood has happened and when it has ended. Table 3.1. does not cover flood events which may only affect one house during heavy rain, and thus does not qualify for the Met Office records. Despite not being 'formally recorded' by an authority, here are many of these smaller, still disruptive floods, which occur.

Table 3-1 Summary of flood events in England 1998 – 2021 (sources: 1- Flood data from Met Office 'Past Weather Events' (Met Office, accessed October 2022), 2- cited from Table in (Ngenyam Bang and Church Burton, 2021, p. 2), 3- Making Space for Water (Defra, 2004), 4- FRMS – Flood Risk Management Strategy compiled by author, based on major floods noted in sources)

Location[1]	Month[1]	Year[1]	Properties flooded[2]	People affected[2]	Comments
Midlands	April	1998	4000	5 deaths	
Kent, Sussex and Yorkshire	September - November	2000	10000	No data	
Widespread UK	October - December	2002	700	No data	
Wittering	July	2004	100	No data	MSfW commissioned
North Cornwall	August	2004		No data	
Carlisle	January	2005	3000	3 deaths	
North Yorkshire	June	2005	No data	No data	MSfW published
Gloucestershire, Herefordshire, Nottinghamshire, Worcestershire, Lincolnshire, Yorkshire and the Humber	May - August	2007	55000	13 deaths	
South-west England, Wales, south-west Midlands, north-east England	September	2008	1250		
Lake District, Cumbria	November	2009	1500	4 deaths	
Cornwall	November	2010	250	138 deaths	Water Act 2010
Lake District and Yorkshire Dales	December	2011	No data	No data	FCERM 2011
Widespread UK	April - July	2012	7900	18,000 affected	
South-west England, the Midlands, Wales, Cumbria, and Scotland	November	2012	No data	No data	
Eastern England, South Coast and Welsh Coastline, Thames and Severn catchments	December - January	2013/ 2014	11,000	6000 affected	
South Coast, Somerset Levels,Thames and Severn Catchments	January - February	2014	870	7000 affected	
North-east Scotland, Eastern England	August	2014	No data	No data	Rochdale Borough Council FRMS[3] 2014
Scotland, Lancashire, North Manchester and West Yorkshire	December - January	2015/ 2016	20,900	60,000	Begin to name storms
South-west England, South Wales	November	2016	No data	No data	
Mid-Wales and Sheffield	September	2018	No data	No data	
South Wales	October	2018	No data	No data	
Wales, exposed coastlines	March	2019	No data	No data	
Wales, West Yorkshire, Greater Manchester, Midlands	March	2019	No data	No data	
Lincolnshire, East Wales	June	2019	130[1]	600 homes evacuated[1]	
Yorkshire Dales, South Manchester, East Cheshire	July	2019	No data	Thousands evauated[1]	
Isle of Man, Wales, the Midlands, southern England	October	2019	No data	No data	
Wales, Shropshire, Staffordshire, Manchester	October	2019	No data	25 homes evactuated[1]	
South Yorkshire, Derbyshire, Nottinghamshire, Lincolnshire	November	2019	5000[1]		
North Wales, West Yorkshire, Pennines, Yorkshire Dales, Cumbria	February	2020	3650[1]	5 deaths, power cuts to 675,000 homes[1]	
South Wales, Herefordshire, Worcestershire, Shropshire	February	2020	1400[1]	1 death[1]	
Yorkshire, Localised Flooding	February - March	2020	No data	No data	
Coastal flooding	August	2020	No data	No data	
North-East Scotland	August	2020	No data	No data	

Notably, the impacts of floods which have not been formally recorded, often due to their local nature, such as when people's homes flooded by localised rainfall, sewer surcharges, or groundwater flooding. In addition, summarising flood impacts solely as properties or people affected does not give due consideration to the many intersecting ways that daily life can be affected: from financial pressures to family stresses, to feeling trapped, to attending meetings. The unit of consideration of 'properties' serves to isolate people from the context of community and catchment, invisibles the ways in which flooding can incapacitate places, local businesses, and social networks. Finally, the recording of storms as 'events' has two impacts: first, it disconnects flooding incidents from a complex and interconnected weather system, where antecedent conditions are a significant factor in ability to respond to a particular storm. Secondly, it presents the illusion that there is an 'end' to the event, a conceptualisation of flooding which is dispelled by accounts of people affected.

As illustrated by the 'events' comprising Table 3-1, recollections of flooding over a long time are "often approached as a time series of flood events, chronological and linear, embedded in mathematical time, external and independent of social life... Consequently, it impedes a nuanced account of the relationship between the flood history and community engagement in flood risk management" (Puzyreva and De Vries, 2021, p. 2). However, it is difficult to imagine how flooding could usefully be engaged with if there was not at least some aspect of 'eventness'. Disaster literature offers an approach to address this, "while disasters should primarily be framed as slow-onset phenomena, we believe that eventness is present" (Meriläinen and Koro, 2021, p. 162). The importance of framing flooding as a disaster resulting from slow-onset phenomena facilitates a recognition of "The degradation of environmental conditions, coupled with stark societal inequalities, [which hence] demands disaster governance that digs beyond the localized disaster risk, and delves into the long-term root causes across all scales" (Meriläinen and Koro, 2021, p. 158).

As has been the case throughout this section, the temporality of flooding is conceptualised widely within the literature and by different actors and institutions. The theoretical perspective of climate justice which underpins this thesis emphasises how perspectives of people most affected is often omitted.

3.2.6. Conceptualising flooding in this thesis

In this thesis, I understand flooding to be an environmental, social, political, and contextual concept. Flooding is triggered by the physical environmental impact of precipitation, or other weather, which is increasing both in frequency and intensity due to climate change. However, flooding is also determined when water enters otherwise dry spaces. Due to this socially constructed nature, flooding is pluralistic in the sense that different people have different views about what defines flooding and why it is important. I align with the conceptualisation of flooding in disaster literature which recognises

climate impacts and injustices as, at least in part, politically constructed (Lizarrante, 2021). Meriläinen & Koro (2021) describe disasters as long-term, slow onset, unfolding processes which have elements of 'eventness'. The 'eventness' aspect in the case of flooding, such as a storm (e.g. Storm Eva), refers to a (loosely) spatially and temporally bounded ingress of water. This 'eventness' characteristic of a flood bleeds into a longer-term, slow onset, unfolding processes of ongoing flood impacts experienced through material impacts, memories, emotions, and ongoing governance interactions and risks endured by people affected by flooding. Additionally, the impacts of flooding are situated in local contexts, particularly exacerbating existing challenges in already vulnerable spaces.

3.3 Governing flooding

Having established flooding as a complex physical, social, and political concept, this section turns to considerations of how flooding is managed, referred to as flood governance. This thesis will refer from hereon to flood "governance rather than 'government' – the latter offering a mere management level analysis, with a diminished analytical value, but with the former including the influence of local actors" (Penning-Rowsell and Johnson, 2015, p. 140). Flood governance in the context of this thesis thus refers to the people and systems engaged in any formal or informal responsibilities for flood risk management. Following the conceptualisation of flood governance presented by Newson, Lewin, and Raven in Figure 3-1 (2022, p. 108), governance in one policy area, such as flooding, is influenced by a broad range of actors and influences. Flood governance can be considered to relate to all purposeful policies created to address flooding (the 'core floods policy' in Figure 3-1) and encompasses different generations of policies. There are also policies which are not purposeful in relation to flooding but that have a big impact on flood risk. These crucially relate to land

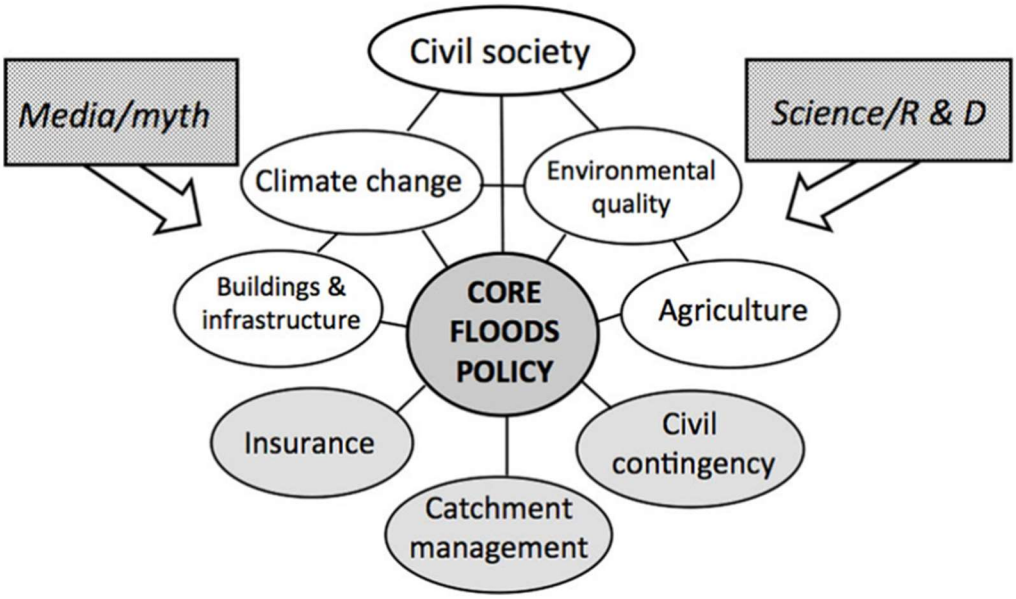

Figure 3-1 Conceptual representation of flood governance, from Newson, Lewin, and Raven (2022, p. 108)

use both rural or agricultural and urban. The British government is increasingly recognising the links between policy areas but the needs of addressing flood risk do not always override other, more urgent, priorities. In this context of this thesis, I engage mainly with the 'core' flood policies and acknowledge external influences where relevant. I also use the term 'flood governance' to refer to these core areas only. For brevity, and because of the focus on England, unless otherwise specified the term 'flood governance' is used to imply flood governance in England.

Flood governance in England distinguishes between different 'types' of flood risk based on the source of the water (Defra and Environment Agency, 2011; Environment Agency, 2020). Surface water flooding arises from heavy rainfall (pluvial risk), river flooding arises from surcharging rivers (fluvial risk), coastal flooding arises from surcharging seas (coastal risk), groundwater flooding arises from saturated soil and rising water tables, and sewer flooding arises from a lack of capacity within sewers. In practice, many of these 'types' of flooding overlap and interact, as intense rainfall may also cause river levels to be high and sewerage infrastructure to be at capacity, but the distinction in types of flooding is used to assign responsibilities (this will be discussed later in the flood governance section).

Each of these different 'types' of floods present challenges to the authorities, "the lack of [relative] knowledge and understanding about the risks associated with groundwater and pluvial flooding, and a lack of institutional capacity to manage these risks, will increase the pressure on state resources." (Johnson and Priest, 2008, p. 523). Resultantly, a comprehensive understanding of surface water and groundwater flood risk is a growing area of importance where the Committee on Climate Change recommend that flood management actors are focusing attention (Committee on Climate Change, 2019). Due to the differing responsibilities, the flood risk is calculated by different authorities, as is clear in Table 3-2 below.

Table 3-2 Properties in England at flood risk, according to flood type (source: author)

Flood type	Risk in England (unless otherwise stated)	Source
Surface water	**Flooding**: 3.2 million properties in England	(Defra, 2021)
River	**Combined fluvial and coastal risk of flooding**[1]: 2.4 million properties from rivers and the sea **Coastal erosion**[2]: 8,900 properties in England	1. (Environment Agency, 2009a) 2. (UK Climate Risk, 2021)
Coastal		
Groundwater	**Flooding**: 122,000 – 290,000 properties	(McKenzie and Ward, 2015)
Sewer	**Flooded in 2020:** 6,400 properties[3]	Author, drawing on Ofwat (2021)

[3] Calculated from Ofwat figure of 2.37 incidents per 10,000 properties for a total of 27 million properties in England

Total	**Flooding:** 5.2 million properties **Coastal Erosion:** 8900 properties	(Environment Agency, 2020)

In addition to the policy documents, there are key flood governance actors who work within the organisations, referred to as Risk Management Authorities (RMAs) who deliver the policies, and key flood governance mechanisms which form partial delivery of the policies. This section will present and discuss flood governance policy, actors, and mechanisms in turn.

3.3.1. Flood governance policy documents

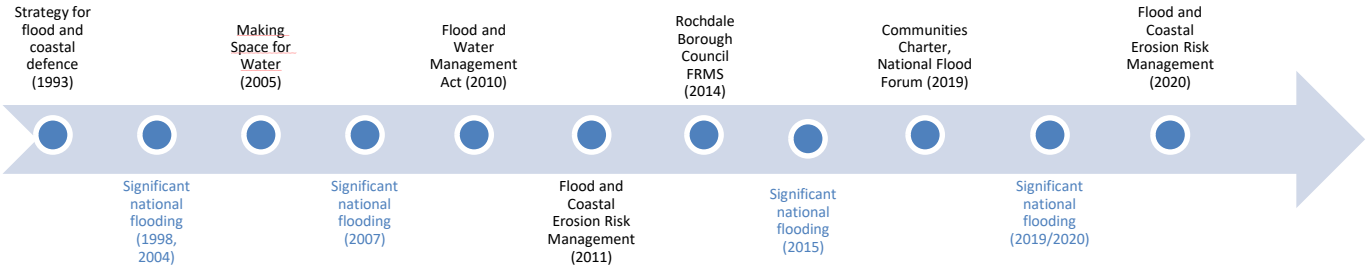

Figure 3-2 Timeline of flood governance policy documents in England 1993 – 2020

Figure 3-2 demonstrates the genealogy of core flood governance policy documents in England since 1993, which are summarised below in Table 3-3, alongside flood events of national significant (see Table 3-1 Summary of flood events in England 1998 – 2021 (sources: 1- Flood data from Met Office 'Past Weather Events' (Met Office, accessed October 2022), 2- cited from Table in (Ngenyam Bang and Church Burton, 2021, p. 2), 3- Making Space for Water (Defra, 2004), 4- FRMS – Flood Risk Management Strategy compiled by author, based on major floods noted in sources).

The development stages of policy documents involve consultation, drafting and redrafting, performed by multiple different authors, writing on behalf of government departments or positions. To an outside reader however, the authors of the writing are not explicitly stated. Additionally, the documents are more likely to serve the purpose of formally marking a shift in governmental position from a previous position and can be understood to represent mainstream governmental discourses of flood risk in England at their time of writing.

Table 3-3 Overview of key flood governance documents 1993-2020

Year published	Policy document title (abbreviation used in later text)	Author
1993	Strategy for Flood and Coastal Defence	Defra
2005	Making Space for Water (MSfW)	Environment Agency
2011	Understanding the risks, empowering communities, building resilience: National Flood and Coastal Erosion Risk Management (FCERM) Strategy (FCERM)	Defra
2014	Flood Risk Management Strategy (FRMS)	Rochdale Borough Council
2020	National Flood and Coastal Erosion Risk Management (FCERM) Strategy (FCERM, 2020)	Defra

The remainder of this subsection will turn to each of the policy documents, before concluding with reflections on how flood governance in England has developed. The most dominant approach of flood governance is one of 'risk management', spanning from 2005 to the present although some scholars argue we are now entering a generation defined by resilience.

Strategy for Flood and Coastal Defence, 1993

The Strategy for Flood and Coastal Defence (1993) is understood to mark the end of the 'defence' generation of flood governance; where flooding was considered something that we can control and keep at bay (Johnson, Penning-Rowsell and Parker, 2007). The emphasis was at defending from flooding to protect economic growth, and to the detriment of any environmental considerations relating to biodiversity or other damages.

Making Space for Water, 2005

Between the previous the Strategy for Flood and Coastal Defence and the publication of Making Space for Water, there were at least three significant occasions of flooding. In April of 1998, a band of heavy rain lead to over 4,200 homes in the Midlands becoming flooded (Met Office, 2012a). September to November of 2000 was the wettest autumn of England as a whole on record at the time, where widespread flooding affecting 5000 homes was recorded as being the most extensive since 1947 and river flows were at their peak for over 60 years (Met Office, 2012b). In 2004 a wet June, July, and August led to flooding in Wittering and north Cornwall (where the steep terrain was noticed as a significant factor) (Met Office, 2013, 2015). As claimed in the forewords, the three successive flood events in a relatively short time "highlighted the need for Government to develop a comprehensive, integrated and forward-thinking strategy for managing future flood and coastal erosion risks in England" (Defra, 2005 Foreword).

Alongside the flood events, Making Space for Water (MSfW) references three pieces of policy which influenced it. The first was published in 2000, when the European Commission published the Water Framework Directive (2000) as a response to claims that existing policy was too localised and too fragmented. Without focusing explicitly on flood management, the resulting policy has a strong emphasis on catchment- and shoreline-based approaches to water management. The second document, The 'Foresight Future Flooding' report (2004), was published shortly before the consultation period for Making Space for Water was completed. The Foresight Future Flooding report was commissioned as an independent investigation into flooding in the UK, focusing on the economic, social and environmental factors. Foresight Future Flooding concluded that future flood risk would grow to unacceptable levels, and that the approach to flood defence at the time of writing would not sufficiently mitigate the increased risk. The third document referenced as influential was the UK Sustainable Development Strategy, 'Securing The Future', published by Defra in 2005. This sustainable development focused strategy for the UK was published just after the consultation phase for MSfW, and just before the publication of MSfW. Securing the Future concluded that the model of development was unsustainable and led to environmental extraction and increased poverty and inequality, and that both *adaptation* and mitigation of climate change would be essential for reducing the impacts. Within Securing the Future, the upcoming publication of MSfW is referenced as focusing on sustainable management, and 'reducing the risk to a greater proportion of vulnerable properties while making sure the policies contribute to sustainable development'. Understood in the time it was published, there is a move is towards 'sustainability' (although the emphasis remains on economic), holism, and climate affects. The Water Framework Directive also had significant influence on management of catchments rather than a localised approach.

Understanding the risks, empowering communities, building resilience: National Flood and Coastal Erosion Risk Management (FCERM) Strategy, 2011

In 2007, and between *Making Space for Water* and *Understanding the risks, empowering communities, building resilience*, England saw widespread flooding. As Table 3-1 (p. 43) presented, the flooding affected 55,000 homes[4], with 13 people losing their lives. According to Pitt, Independent Chair for the review of the lessons to be learned from the summer floods of 2007 , the flooding resulted in "the largest peacetime emergency since World War II" (Pitt, 2008, p. vii). As a result, in 2008 a review conducted by Sir Michael Pitt was published, investigating 'lessons learned from 2007' and giving "priority to the interests of victims of the floods, whether … residents, business owners or

[4] Equivalent to 1 in 400 dwellings at the time (Department for Communities and Local Government, 2022)

farmers" (Pitt, 2008, p. vi). Arising from Pitt's findings was that there ought to be clarification regarding responsibility for managing flood risk.

Two years later, in 2010, the Flood and Water Management Act (FWMA) (*Flood and Water Management Act*, 2010) was passed, which aimed to deliver "provision about the management of risks in connection with flooding and coastal erosion" (Flood and Water Management Act, 2010, p. Introduction). The draft of the FWMA bill stated Pitt's influence, claiming that the FWMA was an "important part of the UK Government's response to Sir Michael Pitt's Report on the Summer 2007 floods" (Defra, 2009, p. 9).

Section 7 of the Act, regarding the National flood and coastal erosion risk management strategy, specified that "The Environment Agency must develop, maintain, apply and monitor a strategy for flood and coastal erosion risk management in England" (Flood and Water Management Act, 2010 Section 7), leading to the production and publication of *Understanding the risks, empowering communities, building resilience*, which was published in May 2011. While the Environment Agency was tasked with a specific role, Section 13 of the Act is dedication to co-operation. It states that a "relevant authority must co-operate with other relevant authorities" (*Flood and Water Management Act*, 2010 Section 13). This picks on up the importance of partnership working highlighted by Pitt (2008).

A general emphasis of the technical aspect of flood risk that runs throughout FCERM 2011, and consequently can be considered to shape the related research agenda "a corollary of technically oriented approaches becoming the convention for risk management, their limits, boundary effects, contradictions and politics are now receiving more academic attention" (O'Hare and White, 2018, p. 386). This technical approach has been found to limit not only the flood governance conceptualisation of flooding, but also has implications for shaping the related research agenda.

Lead Local Flood Authority Flood Risk Management Strategies

It is worth mentioning the FWMA requirements of local authorities briefly here. Section 9, regarding Local flood risk management strategies (FRMS) for England , of the FWMA Act specified that "(1) A lead local flood authority for an area in England must develop, maintain, apply and monitor a strategy for local flood risk management in its area…" which "must be consistent with the national flood and coastal erosion risk management strategy for England under section 7" (Flood and Water Management Act, 2010 Section 9). Lead Local Flood Authorities are thus required develop their FRMS in accordance with the FWMA, among other policies.

National Flooding and Coastal Erosion Risk Management (FCERM) Strategy, 2020

The updated Flooding and Coastal Erosion Risk Management (FCERM) conceptualises a 'prepare and respond' flooding model which aims to achieve resilience by 'building back better' (FCERM, 2020, p. 13) in order to 'get back to normal' (FCERM, 2020, p. 13). This policy language suggests conceptualisations of distinct, predictable flood events, implying that a flood is a purely physical presence from which everyday life can be returned to after the water has cleared away. This document postdates the flooding experienced by participants that were researched in this project, and hence is not covered in detail. It should be noted however that it brought a number of other developments in the way the public were conceptualised that will be discussed briefly in the concluding chapter of the thesis.

3.3.2. Actors in flood governance

Table 3-4 illustrates the complex entwinement of actors, structures and responsibility in the public sector. The lack of clarity about the roles of the many actors within FCERM has been highlighted as a source of inefficiency (Pitt, 2008; Butler and Pidgeon, 2011b). The organisations are referred from here as Risk Management Authorities (RMAs), and although the Flood and Water Management Act 2010 sought to address this confusion, by requiring cooperation between RMAs, it is not clear how far it has been successful. It is notable that the actors and responsibilities are organised around flood type (hazard) rather than implications (exposure and vulnerability), indicating a focus on the flood event, rather than the effects.

Table 3-4 Actors within FCERM in England, adapted by author from Local Government Association (2018)

Organisation	Role	Flood type
Department for Farming and Rural Affairs	Policy Lead for Flood and Coastal Erosion Risk Management	All
Environment Agency	Overview of all flooding sources, develop national strategy. Officially designated as a [Flood] Risk Management Authority (RMA).	All, long term development mainly on large rivers and coast
Lead Local Flood Authority (LLFA)	Responsible lead for ensuring the management of local flood risk. Like the EA, LLFAs are designated RMAs but are also responsible for ensuring cooperation between Risk Management Authorities (RMAs) at the local level. Must consult with public.	Local flood risks of surface water, ground water and small watercourses
District and Borough Councils	Work in partnership and carry out flood risk management works on minor watercourses	Work with LLFA
Coast protection authorities	A set of RMA which leads on coastal erosion risk management activities in their area. Responsible for developing Shoreline Management Plans (SMPs)	Coastal flooding

Water and sewerage companies	A further set of RMAs who manage the risk of flooding to water supply and sewerage facilities, and flood risks from failure of their infrastructure.	Sewer flooding
Internal Drainage Boards[ii]	Elected members intended to represent land occupiers, the public and other interest groups. Independent public bodies responsible for managing water levels in low-lying areas, and supervising land drainage and good defence works on ordinary watercourses.	Managing low-lying areas, land drainage
Highways Authorities	Lead responsibility for providing and managing highway drainage and roadside ditches.	Highway drainage
The public	(Increasing) responsibility for personal flood risk; Flood Groups	Personal
	(i) actors added by author (ii) only relevant in certain areas of the country	

Although the FCERM actors in Table 3-4 are formally responsible for shaping flood risk management, additional external actors and factors have positive and negative, significant impacts on flooding, whether intentional or not. This includes Flood Re and insurance companies, which can arguably be considered a private sector set of flood governance actors. Examples of impacts include modifying land use, collective mutual aid responses, fly tipping and blocking a river, or lobbying food governance actors. for managing personal exposure).

These actors can be considered to comprise a role within a wider realm of flood governance, which incorporates all actions which shape how flooding manifests, including the formal FCERM strategies. Critically, land use planning in the UK has control over 'developed' land (under the remit of the dept of levelling up) while other land is agricultural and under Defra's remit. Either way, decisions about land are only occasionally influenced by FLOOD GOVERNANCE concerns.

I will discriminate between formal flood governance actors and informal flood governance actors. Formal flood governance actors are professionals tasked formally with flood governance within their roles in RMAs and shown in Table 3-4. They include flood teams in Defra, the Environment Agency, Local Authorities, District and Borough Councils, Coastal Protection Authorities (CPAs), Water Companies, and Internal Drainage Boards (IDBs). In practice, not all of these RMAs work together in every area; in particular IDBs and CPAs are limited to small low-lying land areas and the coast respectively. Informal flood governance actors refer to people who do not have formal responsibilities and whose professional roles have an impact on flooding but who do not usually focus on flooding and flood management as their main aim. Examples include planners, developers, highways engineers and building maintenance team as well as people who may be engaging as a member of the public,

often due to being affected. I have included them as an actor here due to the increasing inclusion in flood policy and also because they can be considered to be experts of flood experience.

Flood governance in England is a complex system, involving many actors (such as those working in the EA, Defra and Lead Local Flood Authorities), across public and private sectors, and is enacted through a series of policies and agreements, such as the policies discussed above. While clear policy procedures exist, Sayers (2017) notes how 'political imperatives', such as public outrage after a particular event, can influence government spending on recovery and divert the intended policy outcomes. The document highlights how decisions regarding policy obeyance and diversion can be shaped by unexpected events. However, the grounds that these decisions are made on, and which individuals have the power and resposibility to make them will vary.

The management of flood risk to the public, businesses and communities is a fundamental responsibility within flood governance and details and implications of this are widely debated in literature. Increasingly embedded in FCERM guidance (e.g. Defra, 2005; Defra & Environment Agency, 2011; Environment Agency, 2020), the shift towards increased public engagement in FCERM is hailed as a useful, more-just, progression allowing residents to influence decisions regarding their localities (Jager *et al.*, 2016; McEwen *et al.*, 2017; Miller Hesed and Ostergren, 2017; Moon, Flannery and Revez, 2017). While the overall shift towards localised participation and power is celebrated, critiques suggest that the new approach represents more devolved responsibility than devolved power (Penning-Rowsell and Johnson, 2015).

In addition, there has been a noticeable shift with increasing emphasis on the responsibility for the public to implement personal flood protection measures (Begg, 2018; O'Hare and White, 2018), resulting in people with adequate financial resources being more able to protect themselves and their immediate surroundings (Thaler and Hartmann, 2016). Thus, the capacity of socially vulnerable groups (who have less ability to implement personal measures or cannot access disposable income) to manage the increased risk and take on responsibility for flooding is likely to be lower, and subsequent experiences of flooding causing disparate drops in wellbeing among those exposed (Thaler *et al.*, 2018). The potential for serious social disruption caused by flooding (Walker *et al.*, 2011; McEwen *et al.*, 2017; Waite *et al.*, 2017; Butler, Walker-Springett and Adger, 2018; Mort *et al.*, 2018) illustrates a requirement for FCERM to a negotiate socially acceptable levels of risk (McEwen *et al.*, 2017).

In the shift from defence to risk management, in addition to the changes in physical management of the water, there were impacts on who is responsible, "despite attempts to 'hollow-out' the state through the scaling 'out' and 'down' of flood governance responsibilities … control over

the modalities of power retention in this context remain highly concentrated and centralised; it is the responsibility that has been localised, not least to those at risk of flooding" (Penning-Rowsell and Johnson, 2015, p. 132). Making Space for Water was a policy document that embodied the shift in from flood defence to flood governance.

Part of this shift resulted in a transferal of more responsibility on individuals, both the actors working in RMAs and those affected by flooding, "while national flood policy is objective in its aims, what actually happens 'on the ground' is framed through the experiences and interpretation of the individual members of the flood authorities" (Mehring *et al*., 2021, p. 12). While the transfer in itself is not necessarily good or bad, the process of including those individuals was highlighted as needing to be "participatory, transparent, accountable and, ultimately, less complicated, both for those paying for flood risk management (i.e. the taxpayers) and for those being asked to take on more risk responsibility (i.e. those at risk)" (Johnson and Priest, 2008, p. 524).

Flooding is complex and flood governance "necessitates the generation of an exhaustive understanding of the sources, pathways, impacts and societal elements of flooding, in order to generate an understanding of what solutions could be developed to address it" (Mehring *et al*., 2018, p. 110). However, a currently emphasis on technical, scientific approaches "inhibit the utilisation of social learning and miss opportunities to increase societal resilience to flooding" (Mehring *et al*., 2018, p. 114).

Approaches to flood governance often involve understanding and mitigating the intersecting influences of hazard, exposure, and vulnerability. Examples of these in a flooding context are hazard: the probability of a flooding event, exposure: who or what is exposed to flooding, and vulnerability: the capacity to experience disruption from flooding (Koks *et al.*, 2015). The examples of increasing exposure to flooding above demonstrate how the 'hazard' of flooding is increasing due to climate change, and the 'exposure' to flooding is increasing due to land management. Furthermore, flood risk management "has long been dominated by scientific expertise and centralized decision-making limiting the number of stakeholders to governmental bodies and their private contractors" (Puzyreva *et al*., 2022, p. 2). Thus, the position of the public as active risk managers within flood risk management may increase 'vulnerability' to flooding, since, as Penning-Rowsell and Johnson note above, responsibility has been shifted without any power or resource.

Flood groups are increasingly mentioned in policy documents outlining FCERM. While formal recognition of the role of flood groups may seem beneficial for local residents, the process of transferring responsibility onto individuals (usually without resource) is known as responsibilisation, and critiqued for relieving authorities of work (Thaler and Priest, 2014; Moon, Flannery and Revez,

2017). Flood groups are comprised of local residents who intentionally come together, sometimes as a result of a FCERM official bring them together, to reduce local impacts of flooding (Simm, 2016). While flood groups can be comprised of diligent and hardworking individuals, research is lacking which demonstrates that these groups do not reproduce power structures through their hierarchies. Furthermore, individuals with the most capacity to be involved in flood groups are likely to be time- and money-rich. Land uses are influenced by the practices of formal organisations and individuals with formal responsibilities (landowners / tenants) but by many informal practices too. In some cases, low-capacity residents may experience significant flooding and thus feel as though they must take part, but the voluntary nature of flood groups is not likely to be sympathetic to individuals with limited resource.

3.3.3. Mechanisms relating to the public within Flood Governance

This subsection covers some of the key policy mechanisms within flood governance, including flood warnings, property level protection, stakeholder engagement, and insurance.

Flood warnings (for possible flooding) and alerts (for likely flooding) are deployed by RMAs in order to communicate about flood risk to the public. Research into the flooding in Hull in 2007 highlights several challenges relating to flood warnings (Whittle *et al.*, 2010). Firstly, there is a discrepancy in the type of flooding that gets warnings, for example, fluvial and coastal flooding are easier to predict and thus have more developed warning systems compared to pluvial flood risk. In addition, rapid response catchments, which are characterised by steep sided valleys, have particular flood alert challenges as the flooding can occur so quickly. The flood alert messaging can be inconsistent across the RMAs, leading to confusion from the public who are receiving it. Further research suggests that flood warnings should be take account of "personal attributes of the target audience, such as demographics and experiences with past events. At the same time, warnings should be sensitive to the specific local contexts and forecast scenarios" (Kuller, Schoenholzer and Lienert, 2021, p. 11). Flood warnings have also been highlighted by RMAs as challenging, due to the innate probability linked to them and the worry that the public may not take them seriously if there are too many (Rollason *et al.*, 2018).

Property level protection (PLP) refers to the measures that an individual can take to reduce the flood risk to their home and includes short term measures, such as sandbagging and barriers, or long-term measures, such as bunds and changes to waterproof internal aspects of the property. O'Hare and White highlight how people in certain areas may have less capacity to install or undertake PLP measures, due to existing vulnerabilities which affect the ability to afford PLP, be aware of flood risk, or ability to move house (O'Hare and White, 2018). While PLP can reduce the risk of flooding, it is not recognised by insurance companies as doing so, which Surminski suggests is due to the

complexity of calculating it, "the adoption of property level measures is difficult to assess so insurers do not necessarily see them as a basis for lowering policy costs" (2018, p. 56). This results in a reduced motivation for the public to undertake PLP if they are able to, and could link to difficulties of obtaining home insurance, which is discussed below.

Community engagement can be considered a policy mechanism which aims to involve the public in order to improve their resilience and address the (relatively new) responsibilities (Begg, 2018) (discussed in the previous sub-section). Community engagement here focuses on the methods of engagement used to involve members of the public, which take different forms depending on the risk management authority and the purpose. Studies link changes to the funding strategy of flood governance which result in community engagement resembling an (unpaid) delivery of policy objectives, "a consequence of the introduction of partnership funding in England is a strong involvement of local citizens in the planning and decision-making practices… we observed a 'privatisation' of responsibility, moving to non-state actors and stakeholders" (Thaler and Hartmann, 2016, p. 144). A climate justice approach would encourage the inclusion of people affected, but not at their own cost. This illustrates how not all community engagement is good engagement.

Other scholars echo that despite the increasing attention given to community engagement, "we observe a paradox of responsibilities and duties often being shared without powers and necessary resources to fulfil them. This results in a situation where communities are left to fulfil government-set agendas and meet institutional requirements, without necessary capacities to challenge the status-quo" (Puzyreva *et al*., 2022, p. 2). Community engagement which responsibilises people can result in professionalisation of the public and inclusion of them into flood governance agendas, rather than seeking to understand and include public perspectives of their experiences, "To become institutionally acknowledged, community groups are expected to develop into 'local professionals' mimicking agencies' approaches and understandings of floods and flood management" (Puzyreva and De Vries, 2021, p. 6). The professionalisation of the public can further distance RMAs from the range of experiences and impacts felt by the various groups and members of public affected by flooding. To overcome this requires, "tackling a common misconception of 'the community' as a homogenous entity is required" (Puzyreva and De Vries, 2021, p. 6). Although community engagement has ever-increasing prominence with flood governance, if some members of the public are required to perform a certain role and take on responsibilities, it is clear that it cannot be for *anyone*. This speaks to epistemic and procedural issues of justice.

Flood insurance cover for homes affected by flooding is key to financially recovering from flooding. In return for a governmental commitment to investment in flood risk mitigation, the private

insurance market has introduced a reinsurance pool, Flood Re, which offers flood insurance "as part of a standard policy to households and SMEs, built before 2009, where flood risks are not significant or where defences are due to be built within five years" (Surminski and Eldridge, 2017, p. 418). The clause of houses before 2009 was intended to discourage developers from building on flood plains, as the homes would be uninsurable. This has not been the case, with "around 17,000 new homes that have been built in HFR [High Flood Risk] and LFR [Low Flood Risk] areas in England and Wales on average each year over the last decade" (Rözer and Surminski, 2020). Each of these new homes represents potential future flood risks on top of those increasing due to urbanisation and climate change.

Furthermore, the deployment of Flood Re to homeowners has not been smooth since take up has been relatively low, with an investigation into flood insurance after flooding in Doncaster in 2019 finding that "Flood Re supported cover was either not being consistently offered to, or not being taken up by, households who would benefit. If replicated across the country, this could mean tens of thousands of vulnerable households who are unnecessarily unprotected against flooding and missing out" (Blanc, 2020, p. 7). The most plausible explanations are cost of insurance, renewing old policies without being aware of Flood Re, and insurance brokers' unawareness of Flood Re. While Flood Re enables many more households to be insured than the private market, the debates here suggest that there are barriers to its successful operation. Additionally, Flood Re is set to exit the market in 2030.

This section introduced a conceptualisation of flood governance as the "people and systems engaged in any formal or informal responsibilities for flood risk management" on page 45). It has presented a summary of flood governance policies, actors and mechanisms and highlighted how there is no one size fits all solution: warnings and alerts need to be tailored to the audience, community engagement can be exclusive if it requires certain skills, and although there is an incentive not to build houses built on flood plains, this has not yet dissuaded all developers. The next section will use the conceptual material presented in this chapter so far to highlight the compatibility of flood research from a climate justice approach.

3.4 A case for researching flooding through a climate justice lens

Although the shift to risk management governance better addresses the issue of increasing flood risk compared with flood defence, through an expanded understanding of 'living with water', rather than 'keeping water at bay', there remain concerns for flood inequality in England (Walker and Burningham, 2011). This section will present and discuss research from the last decade which positions flooding as a justice issue, (e.g Walker and Burningham, 2011; Neill and Neill, 2012; Joy *et al.*, 2014; Thaler and Hartmann, 2016; O'Hare and White, 2018; Thaler *et al.*, 2018). While research has sought

to understanding and address inequality, many previous approaches focus on a single aspect of flood governance.

Existing research investigating justice implications covers a wide range of perspectives. For example, Johnson, Penning-Rowsell & Parker (2007) interrogated decision making relating to flood investments. Other scholars have investigated causes of flood risk inequality, locating it to concentrated areas experiencing high Indices of Multiple Deprivation (IMD), (Lindley *et al*., 2011; O'Hare & White, 2017; Sayers, 2017). These areas can be characterised as coastal towns, economically struggling cities and dispersed rural communities (Sayers, Penning-Rowsell and Horritt, 2018). Further flood inequality research suggests that the likelihood of experiencing a flood does not depend solely on topological flood risk but also social factors such as age, race ability, gender or income (e.g. Enarson and Fordham, 2001; Fielding, 2012, 2018). Detailed qualitative investigations into individual experiences of flooding show that for many people it is a distressing experience that persists long after the floodwater recedes (e.g. Whittle *et al.*, 2010; Butler, Walker-Springett and Adger, 2018; O'Hare and White, 2018). Building on the existing scholarship, the gap this investigation aims to fill is therefore to operationalise a climate justice framework for the systematic consideration of flooding in the UK.

3.4.1. Considerations of justice within flooding

Flooding is positioned as "a suitable candidate for discussions about justice" (Begg, 2018, p. 383) due to the many people that it impacts globally. In addition, Adger *et al*. highlight how there is a requirement on governments to take inequalities within flood management seriously, "If governments fail to act on flood risk, or do so in ways perceived to be unfair, in both process and outcome, disillusionment and resistance will come to characterize how adaptation to climate change unfolds" (Adger *et al*., 2016, p. 1094). The positions considerations of fairness, and justice, as important not only due to the nature of the unfairness but also because a lack of trust could harm the ability of governments to deliver climate adaptation.

Despite the general arguments for considering flooding from a justice perspective, Thaler and Hartmann noted in 2016 how "discussion and implications of justice in flood risk management literature is scarce" (Thaler and Hartmann, 2016, p. 130), a challenge which has since been taken up by scholars "Notions of fairness, equity and justice are increasingly being discussed … in relation to flood risk management (FRM)" (Kaufmann, Priest and Leroy, 2018, p. 325). O'Hare and White suggest that "more critical understandings of the contextual, pluralistic and contingent nature of [flood] disadvantage will prove to be a vital step in the reorientation of 'just' flood risk management from being an abstract notion to one that could alter current and future practice" (2018, p. 393). The resulting paragraphs of this sub-section will explore the alignment between flooding research challenges and climate justice.

New approaches to overcoming challenges in the flooding literature demonstrate a commitment to the contextual, pluralistic and contingent nature of flooding mentioned above. In order to overcome the inequalities and injustices, scholars often propose new conceptualisations of flooding, including, recognising the pluralistic nature of flooding, moving away from understanding flooding as an event, interconnectedness among a range of knowledges relating to flooding, and considering how external factors and systems influence flooding.

The conceptualisation of flooding has "real consequences for how a disaster is framed. If taken as a singular event or phenomenon, institutional framings follow that delimit, usually with clear temporal and spatial boundaries, the `when' and `where' of an event. ... To recognise multiplicity is therefore to keep open the possibility that there is more to be learnt about disaster and its consequences" (Walker *et al.*, 2011, p. 2318). Walker *et al* highlight not only how a conceptualisation of flooding should remain flexible to new definitions, but also there should be space for multiple, interacting and relative conceptualisations in order to understand the range of impacts felt (Puzyreva and De Vries, 2021).

While climate change may be an urgent problem, it does not follow that 'solutions' should be rushed or surface level. Rather, a sensitivity to "the chronic nature of floods and associated losses highlights a necessity for long-term, non-structural flood risk management" (Puzyreva and De Vries, 2021, p. 2). The risk of rapid solutions, sometimes enacted to promote political agendas, "are not likely to represent a sustainable, proactive, long-term approach to risk reduction and enhancement of resilience of local communities" (Adger *et al.*, 2016, p. 1093). This calls for both flooding, and responses to flooding, to be understood in longer time scales than the currently are.

There are a range of knowledges which can each present partial perspectives to understanding and exploring the pluralistic and ongoing challenge of flooding. A literature review found that "Flood Risk Management is a complex challenge and comprises many interacting scientific, practical and political dimensions. Advancing the flood governance resilience research agenda requires, at a minimum, interdisciplinary and transdisciplinary research that integrates across [these dimensions]" (Morrison, Westbrook and Noble, 2018). Mehring *et al.* build on this to include similar knowledges which may, for example, be applied in different contexts, "engaging with other areas and learning from their experiences may provide additional resources to facilitate the move to more democratised ways of working" (Mehring *et al.*, 2018, p. 114). Thus, fostering communications to increase understandings across and between different knowledges may act to surface the pluralisms mentioned above.

Maintaining an awareness for how external factors may relate to flooding challenges can also reveal the structural political choices which render certain publics and places vulnerable to flooding (Thaler and Hartmann, 2016; O'Hare and White, 2018). While understanding these factors elucidates inequalities, Fielding notes that a "negative consequence of this approach is that individuals may become stereotyped based on the defining functional deficit. Another problem is that such defined 'vulnerable groups' are not homogenous" (Fielding, 2018, p. 102). Thus, while a sensitivity to structural inequalities is vital, it must not replace a commitment to understand how flooding impacts manifest specifically and uniquely for different people.

A pluralistic approach to flooding also makes space for people to share their experiences, which can address the specific manifestations of flooding as well as additional aspects of flooding, such as raising awareness of flood risk and flood governance, increase resilience, and possibly reduce workloads of RMAs. As McEwen *et al.* note, "empowered and well-informed groups with community capital across demographics … can adapt, thrive and seize opportunities…[and have] potential for actionable knowledge in understanding flood resilience in different settings" (McEwen *et al.*, 2017, p. 26). This goes beyond responsibilising members of the public and requires sufficient resourcing for people to be able to pursue the types of flood governance which function for their needs.

This section has discussed how approaching flooding as a long-term, politically produced phenomena, experienced differently by different people, can reveal causes of flood inequalities. It can also justify the resourcing and meaningful inclusion of the public and render flooding a suitable candidate for considerations of (climate) justice. The subsequent subsections highlight some of the specific instances of the tenets of climate justice which are present within flooding and flood governance literature, they are not intended to provide an exhaustive account but rather to demonstrate the overlaps between the two areas and justify the investigation of flooding through a climate justice lens.

3.4.2. Justice as recognition within flooding and flood governance

Concerns relating to justice as recognition are present in the literature above primarily through debates about responsibilisation and professionalisation. The literature suggests that, in order for people to be recognised as stakeholders, they are "expected to develop into 'local professionals' mimicking agencies' approaches and understandings of floods and flood management" (Puzyreva and De Vries, 2021, p. 6). This suggests that people are not always recognised for being affected by flooding, not least as experts in what it is like to be flooded. Scholars call for increased participation (particularly focusing on vulnerable people) in local-level projects (Jager *et al.*, 2016; McEwen *et al.*, 2017; Miller Hesed and Ostergren, 2017), specifically to recognise "the important role that community capacities play in flood risk management strategies is therefore crucial if authorities

want to increase the legitimacy of the decision-making process and not exacerbate existing or introduce additional inequalities in how flood risk is managed" (Thaler *et al*., 2018, p. 308). This debate relating to how people are recognised, and how they should be recognised, picks up concerns about recognition, such as how it can be both affirmative and deconstructive, and how a focus of recognition can unveil who is left out of conversations, since people left out may not have the capacity to raise such questions themselves.

3.4.3. Procedural justice within flooding and flood governance

The political nature of flooding highlighted above involves numerous procedures and is thus opportune for procedural justice considerations. Debates relating to procedural justice explore inclusive approaches to flood prevention investment (Neill and Neill, 2012; England and Knox, 2015), querying the causes of prioritising one knowledge set over another, "the English government follows a strongly technical decision-making process" (Thaler and Hartmann, 2016, p. 139), and highlights where processes fail to deliver "flood risk management documents issued by the Council showed no reference to flood preparedness and working in partnership with the local community" (Puzyreva and De Vries, 2021, p. 6). Furthermore, an appreciation for how processes play out can explain outcomes, for example "as a result of these management practices, the examples show that local stakeholder influence in the selection of measures is limited and uptake of responsibility, particularly in regard to personal mitigation measures at the property level, is lacking" (Begg, 2018, p. 388). Some perspectives position processes as the cause of disasters, "Who is affected [by disasters], and in which manner, is more a matter of how societies are organized, than it is of the type of a hazard" (Meriläinen and Koro, 2021, p. 161) which locates procedural justice concerns of the processes that tie recognition and distribution together as a central concern of just flooding.

3.4.4. Capabilities approach within flooding and flood governance

The literature highlights rigorous evidence that flooding in England disproportionately affects those least capable to manage the consequences (Lindley *et al*., 2011; O'Hare & White, 2017; Sayers, 2017). However, studies which explore the specific manifestations of flooding impacts from a justice perspective are fewer. The deep studies researching experiences of flooding (Whittle *et al.*, 2010; Walker *et al.*, 2011; Williams *et al.*, 2017) illuminate how people experience ongoing disruptions, stresses, and other impacts, and that the 'recovery' is non-linear. There is scope for more meticulous investigations of the nature of flooding impacts, especially relating to the climate justice concern to understand multiple personal impacts on everyday life covered by the Capabilities Approach.

3.4.5. Epistemic justice within flooding and flood governance

In general, literature exploring fairness, vulnerability and justice within flood governance in England tends to consider single aspects of justice, such as equality or utilitariasm (Begg, 2018;

Kaufmann, Priest and Leroy, 2018; Sayers, Penning-Rowsell and Horritt, 2018). Climate justice, in contrast, calls for a collectively defined justice which arises from presenting and platforming the opinions of the people who are most affected. Furthermore, epistemic justice positions people affected as holders of experiential knowledge which could usefully embellish the existing technical and political knowledge bases that inform flood governance. The potential for recognising, understanding and incorporating local lay knowledge is acknowledged in the literature (McEwen *et al.*, 2017; Miller Hesed and Ostergren, 2017), and Fielding notes a challenge in the hermeneutic accessibility of publics to engage with flood governance, since "those who lack either the cultural experience or the linguistic knowledge to know where to get help in a flood-related emergency are at a disadvantage and thus are of great concern to disaster managers" (Fielding, 2018, p. 104). Therefore, the "call for co-productive, interdisciplinary participatory approaches contributing to developing integrated and sustainable options for flood management involving communities and agencies" (Adger *et al*., 2016, p. 1093) must also include an awareness of how current, mainstream processes of participation and engagement may not create spaces where people can understand, contribute, and feel understood. This aligns with the concerns of epistemic justice to 'bear witness' and 'make space' (p. 34).

3.4.6. Considerations of scale within flooding and flood governance

Scalar considerations are presented as concerns of flooding, with scholars highlighting how "the social–spatial dynamics of FRM are intimately affected by national and international policies, …organisations and individuals" (Penning-Rowsell and Johnson, 2015, p. 140). It is also recognised how decisions at one level inform outcomes at another level (Begg, 2018), and that a reframing of flooding, which includes considerations of vulnerability and justice could lead to the fuller understanding of the subtle socio-spatial-temporal productions of inequality that is required (Joy *et al.*, 2014; O'Hare and White, 2018). Scalar considerations within the climate justice framework relate to an awareness of the (re)production of injustices across time and space (Section 0).

3.5 Conclusion

Through an overview of key debates in research relating to flooding, focusing on flood governance, politics, and disaster, I have demonstrated how the conceptualisation of flooding is key to shaping responses and informing research. This chapter has presented current debates in the literature relating to flooding and flood governance. Section 3.2 discussed the various conceptualisations and approaches to flooding and presented the reasoning for engaging with flooding as an environmental, social, political, and contextual concept which is slow-onset and experienced pluralistically. A conceptualisation of flood governance was presented in Section 3.3 which incorporates policy documents, actors, and mechanisms, in addition to an awareness that

flooding and flood governance does not occur in a silo: there are external actors and factors which influence the design, delivery, and experience of flood governance.

Section 3.4 demonstrated how flood risk literature has engaged with issues of flooding as a justice issue. It highlighted how endeavours to research flooding align with the theoretical climate justice framework presented in the previous chapter. A specific climate justice approach offers the potential for interweaving the range of justice concerns with flooding. This can offer an overarching understanding of climate justice and flooding in England, addressing calls from scholars (Thaler and Hartmann, 2016; O'Hare and White, 2018) for further investigation of the intersections between justice and flooding. Thus, this chapter has provided the conceptual evidence underpinning the aim of this thesis, to theoretically outline and empirically develop a climate justice framework, which can be worked through exploring flooding and flood governance in England.

In this chapter, I have shown that a lack of justice in flood impacts is already discussed in the literature in a variety of ways. Nevertheless, it is notable that no studies have sought to bring these together to discuss the different components of climate justice highlighted in the last chapter. The literature review together has therefore demonstrated a research gap: while existing research investigates impacts of flooding on the public, there is an absence of research which positions people and flood governance actors as agents of valuable experiential knowledge. If, as is predicted, flooding becomes a more frequent and more intense phenomenon, then understanding experiences of flooding and designing flood governance that can address key concerns is vital.

The next chapter considers the practical implications of undertaking this research, focusing the aim through specific research questions. It considers how a climate justice approach shapes several methodological considerations and discusses data generation and analysis.

Chapter 4 | Research design and methodology

4.1 Introduction

This chapter provides a description of the methodological choices undertaken for this research, including presentation of my research aims and questions, a justification of the approach to research, description of case study location, overview of methods, and discussion of the ethical approval process. This chapter offers a retrospective account of how the research project developed, starting from a theoretically informed position, and reacting to theoretical and methodological requirements.

The first three sections lay the theoretical groundwork for the research design. First, the research aim and questions, first presented in the Introduction, are located in the context of key arguments from the previous two chapters. Secondly, a critical realist approach is presented as a theoretical framing for addressing the research aim and questions. I also highlight key considerations arising from my positionality. Finally, the use of a single, local authority case study is justified as the means through which to operationalise the climate justice framework for an investigation of experiences of flooding.

The latter three sections of this chapter provide case study context and details of the fieldwork. Details about Rochdale Borough, including a brief overview of the economy, deprivation status, and flood risk are presented, providing an illustration of flooding in the borough which will be returned to in the empirical discussion. Next, an account of data generation, using virtual interviews, fieldwork diary-keeping, and document analysis demonstrates how I accessed and understood experiences of flooding and flood governance in Rochdale Borough. Data generation was entangled with emergent and theoretically informed coding approaches used to analyse the generated data. The penultimate section offers reflections about the research project, including the impact of Covid-19, before concluding with an overview of the three empirical chapters and how they address the research questions.

4.2 Research aim and questions

Chapter 2 | introduced climate justice as a concept through which to (re)investigate flooding in England. It highlighted how the concept of climate justice continues to evolve using four core tenets which are utilised across various disciplines, scales, and climate impacts. A theoretical climate justice framework was developed by drawing on existing frameworks. It consists of four core tenets - epistemic justice, justice as recognition, procedural justice, and the capabilities approach – and cross-cutting considerations of spatial and temporal scale. Maintaining flexibility within this climate justice

framework was important for ensuring that it is suitable for consideration by different people for different flooding contexts across England.

In Chapter 2 | presented current approaches to researching flooding in England and highlighted how flood risk is correlated with areas of higher deprivation. It also presented how both physical and social impacts can arise from flooding, and which are likely to be compound in areas of deprivation, due to factors such as available finance and job precarity. The theoretical climate justice framework in chapter 2 surfaced the increasing relevance of epistemic justice and highlighted a gap in research which centres experiences of flooding and flood governance. Bearing the findings of these chapters in mind, the research aim of this thesis is to: ***operationalise a climate justice framework for investigating flooding, via a case study in England.*** The emphasis on *operationalizing* relates to how the framework evolved from theory rather practice. By operationalizing, rather than applying, the framework, this thesis makes space in the discussion to reflect on whether the theory is representative of participants experiences and concerns.

Building on these justifications, the following research questions (RQ) were used to guide the research journey:

RQ1. What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?

RQ2. To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?

RQ3. How climate-just is English flood policy?

RQ1 picks up on the value of experiential knowledge discussed in the development of the theoretical climate justice framework. By inquiring about the experiences and concerns of residents and flood governance actors affected by and working on flooding, this research seeks to position people connected to flooding as central to claims about what climate justice might constitute.

RQ2 interrogates each tenet of the theoretical framework of climate justice using the empirical data generated by RQ1. The purpose of this question is to ground climate justice in the empirical findings and highlight and reflect upon similarities and differences between empirical and theoretical ideas of climate justice.

RQ3 functions to investigate the extent to which flood governance policy, a key instrument of flooding governance, can be considered climate just. Alongside the empirical investigation of flood experiences, both of members of the public and flood governance actors, an analysis of two key flood

governance policy documents provides an additional perspective from which to explore climate justice in England.

In reflecting on how successfully the overarching aim - to operationalise a climate justice framework for investigating flooding in England - was met, I conclude the thesis by combining the findings of RQ1, RQ2, and RQ3. I comment on how successfully the aim of *operationalising* of the climate framework was met, using the guiding evaluation questions from Section 2.5. Earlier in the thesis I provided the rationale for situating this research in England. Also in the conclusion, I will reflect on the transferability of the framework to other similar contexts.

4.3 Research approach

This section first introduces a critical realist worldview, comprising of a realist ontology and interpretivist epistemology, which underpins the research project. The section concludes with a summary of my positionality surfacing assumptions which I already hold. Together, the critical realist worldview and my positionality influence my research approach, informing and shaping choices of theory, research design, methods, data generation, and analysis.

4.3.1. Critical realism

As an overarching theoretical framing, or meta-theory (Hoddy, 2018), Critical Realism (CR) offers the ability to overcome tensions within my positionality as researcher bringing together climate justice campaigning experience with technical engineering experience. Through an appreciation of structural power, it also possesses the potential to incorporate emancipatory approaches and values that facilitate thorough research while addressing power and hierarchy within society. This subsection provides an overview of CR and then turns to each of its constituent parts: ontological realism and epistemological interpretivism.

CR can be understood to bring together a commitment to the objective reality of physical and social processes, while recognising that social reality is constructed. It refers to a broad school of thought which has been developed and explored by many scholars in many disciplines over the past 50 years (Maxwell, 2012; Price and Martin, 2018). Hence, it is worth distinguishing the shape it will take in this research project. As covered previously, climate justice is a concept which has multiple manifestations; because of the application of climate justice across many disciplines, locations, and for different ends and purposes, it does not obviously rest on a single worldview. As I will argue below, critical realism is compatible with the climate justice framework and shapes ontological decisions (what I am looking for?) and epistemological decisions (how do I look for it?) in this thesis.

Considered on their own, neither positivism nor interpretivism provides sufficient explanation for the interaction across the physical world, processes, and multiple realities. For example, positivism

reduces the social and the physical to being governed by the same kind of general laws (Gorski, 2013), whereas interpretivism does not sufficiently address the different ontologies underpinning physical phenomena and social phenomena (Gorski, 2013). The rest of this section will demonstrate how CR works to address both of these shortcomings. In addition, two key critiques of CR will be addressed. Since CR combines the two concepts of realism and interpretivism, it requires a defence of such as constructed knowledge and ontological fallibility. These will be addressed in turn below.

Using CR in this research has both theoretical and methodological implications. They are theoretical in their compatibility with climate justice, in the position that we all experience a physical world, and the impacts of climate change, but that we also have real and varying social constructions of that physical reality. In order to operationalise a climate justice framework, this research needs to make sense of the different perspectives and experiences of physical climate impacts. Theoretically, CR provides a systematic framework through which to make sense of my research. CR also has methodological implications in that research is a 'real process' of iteration. "Qualitative research design, to a much greater extent than quantitative research, is a "do-it-yourself" rather than an "off-the-shelf" process, one that involves "tacking" back and forth between the different components of the design, assessing their implications for one another" (Maxwell, 2013, p. 3). Such iteration is informed by my experience, theoretical interests, and practical considerations.

Ontological Realism

Ontological realism concerns the position of there being a real world 'out there'. Since all research contains implicit assumptions regarding what can be known, in discussing this I aim to situate the research and make explicit the assumptions underpinning the research process. I start by presenting CR's position on what exists.

CR theorises a stratified model of reality consisting of three nested domains, which is presented in Figure 4-1, and whose credit is attributed to Bhaskar (Hoddy, 2018). This model can be used to demonstrate the different elements constituting the nature of reality. In the centre, there is the 'empirical' dimension, comprised of events that which we observe. Second, there is the 'actual' dimension, comprised of events which happen but which are not necessarily observed. Finally, there is the 'real' world, consisting of physical and social processes (mechanisms) and includes all that can be known, although much of it has not been, or cannot, be observed (Hoddy, 2018). The stratification of the model allows us to distinguish between observable events (empirical and actual) and unobservable structures which generate events (real).

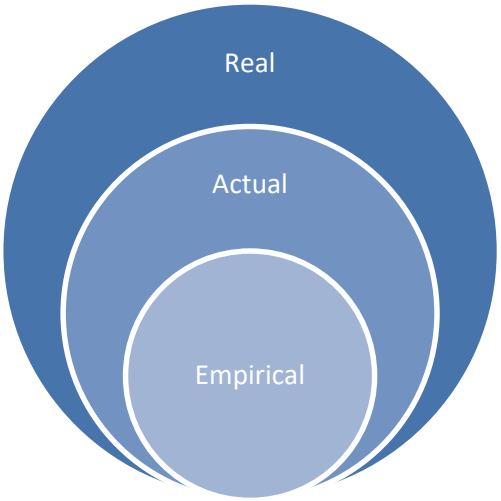

Figure 4-1 Stratified model of reality, by author, drawing on Maxwell (2012)

Ontological realism in this thesis theorises an 'actual' world made up of events, processes, things and relationships, which humans individually interact with through theories and stories. Such theories and stories serve as 'empirical' models by which to interrogate the 'actual' dimension. Although we each have a unique construct or perspective of what constitutes the 'real' world, there are similarities (due to living collectively) across and between the many perspectives which result from, and construct and sustain, social structures in the 'real' domain.

A difference with implications for this thesis relates to the 'empirical' and 'actual' domains, and whether we observe the events ourselves or experience the events through an account of another. Since I have not experienced flooding, and due to the focus on collective ideas about climate justice, this thesis is primarily concerned with understanding impacts of flooding through accounts of people affected. Furthermore, this position reinforces the principles of epistemic justice (discussed in Chapter 2) recognising that each perspective has valuable contributions, although they can be constrained by hermeneutical injustice (Fricker, 2007). Including multiple accounts of experiences of flooding can be understood as prioritizing testimonial justice (Fricker, 2007), whereby each account of the world holds value (although this value cannot be ascribed uncritically).

Realism has traditionally been associated with positivist research and CR is therefore vulnerable to some of the same critiques. Since CR is based on the idea of a world with which we all engage from a situated standpoint of combined aligned and different realities, the criticality needs to be used with an awareness of criticisms against realism. One such criticism of a 'real' world, is the 'god trick' of "seeing everything from nowhere" (Haraway, 1988, p. 581). In contrast to situated knowledge, a god trick would claim that reality is constructed of multiple individuals' constructions or 'framings' which all concern overlapping accounts of what is real. In short, if there is no 'god's eye view', then

how can anyone *know* that there is a world which we all experience differently? This can be rebutted using two key arguments.

Firstly, as Kirk states, the position of a constructed reality is not intuitively convincing; "[a relative reality] is hard to accept when you consider everyday events like rain and burnt toast, not to mention catastrophes like floods" (Kirk, 1999). Here, Kirk is surfacing that we know things happen elsewhere through others' accounts. Some of these things are ontologically real, like the toast, but the experience and accounts of the ontologically real are experience-relative, reflecting a constructed social reality. Thus, it is possible to claim that others' have different experiences to us, so we cannot all occupy the same world all the time. In addition, it can be hard to identify the boundary between what is constructed and what is not, although there are broad categories of the material and the social. Næss and Jensen argue for the utility of critical realism because it allows material (e.g. flooding) and social (e.g. experiences of flooding) phenomena to be investigated at the same time (Næss and Jensen, 2002).

Secondly, the 'critical' aspect of critical realism renders the argument of the god trick fundamentally incompatible. The god trick is inherently objectivist and singular, suggesting there is one correct way to understand the world, and is therefore not compatible with perspectives of critical realism, which itself is inherently partial, situated and pluralistic because we each have our own interactions and constructions of the 'real' world (Maxwell, 2012).

In the context of this research, the realist ontology allows the investigation of real phenomena, flooding. As Maxwell states, "the world as we perceive it and therefore live in it is structured by our concepts" (Maxwell, 2012, p. 9). Thus, this research employs Maxwell's description to understand flooding as a *real* occurrence which holds different social meaning depending on personal perspectives which are partially shaped by both observable structures, such as wealth, housing, and location, and unobservable social structures, such as inequalities, beliefs, emotions, and as yet other unobserved structures. The next section turns to considerations of how to access the world, discussing matters of epistemological interpretivism.

Epistemological Interpretivism

This subsection explores epistemological interpretivism as an approach through which we can *know* about the ontologically real world discussed above. Despite being real, the world is not "objectively knowable" (Maxwell, 2012, p. 9), instead, critical realists assert a position of epistemological interpretivism, that we each hold *perspectives* of reality, which are produced by, and in turn reproduce, perceptions, experiences, concepts, and language.

Returning to the discussion in chapter 3, flooding in this research is understood as a phenomenon comprising of water and a set of meanings about that water in that space. In this sense the term *flooding* denotes unwanted water in a space but has wider connotations for the people experiencing it. Relatedly, the concept of climate justice is broadly focused on how to live well collectively, although this means different things, to different people, in different contexts. Perspectives about flooding and climate justice may be shared among groups with similar experiences, for example the people I worked with in Nairobi had different ideas about climate justice to those I interviewed in Rochdale but within each location, the difference across the meanings of justice was smaller.

Given the polysemous constructs of key concepts such as flooding and climate justice alongside inquiry into an ontologically real world, the epistemological position of this research must be situated and pluralistic. Climate justice approaches have been influenced by and arose from, anti-racist, intersectional, decolonial, and other critical liberatory theories. While each of these theories are comprised of multiple schools of thought and contestations about the details; the shared essence underpinning theories is a recognition of how structures of power influence the way society is organised. Power structures often result in the people most marginalized being 'outside' key discussions and decisions, compounding their marginalization. As a result, such emancipatory theories centre and privilege the viewpoint of the marginalized and excluded people. Some feminist writers also argue that people in marginalized groups have a particular claim to knowing since it challenges the status quo (Doucet and Mauthner, 2006; Bacevic, 2021). In terms of the CR strata in Figure 4-1, the actual experiences of people (public and flood governance actors) affected by climate impacts can provide perspectives on the empirical experience of flooding. Flood governance actors are well placed to understand what flood governance policies are intended to do, and partial experiences of implementing them, but have less experiential knowledge on the wider social experiences. In contrast, members of the public who have been flooded have personal experiential knowledge of how it was for them to be flooded, and (in the aftermath) to experience the impacts of flood governance policies.

A critique of epistemological interpretivism highlights the potential for claims to knowledge to not be representative of people's experiences; for example (in an extreme case), if someone was to claim they had been flooded when they had not. Such claims can be knowingly and unknowingly made, and all claims have potential to be mis or non-interpreted, including claims by the researcher. Easton addresses this criticism by stating,

> "Observation is fallible. It is unlikely to reveal completely and lead to a full understanding of any social situation. Since there can be no definitive criteria to

> judge the "truth" of a particular version, critical realism relies on the researcher to collect further data that helps to distinguish among alternative explanations." (Easton, 2009, p. 123)

Unlike more extreme forms of interpretivism (without the objective reality that CR claims), much CR research is based on the inclusion of a critical researcher stance when considering different claims: "If social scientific accounts differ from those of actors, then they cannot help but be critical of lay thought and action" (Sayer, 2004, p. 14). This is not to say that the researcher is (or can be) correct, but that the use of CR encourages the researcher to consider reasons for different stances and positions in order to reach a position of 'practical adequacy' (Sayer, 2004). Practical adequacy refers to the fallibility of knowledge suggesting that, rather than seeking an untenable, absolute 'truth', critical realists can draw on accounts, events, and other sources in developing '*epistemic gain*' (Sayer, 2004. Thus, practical adequacy reflects rigorous and reflexive approaches to understanding data.

In this research, the use of case study and multiple sources of data provides the 'further data' that Easton claims can help to distinguish explanations. Some claims are essentially personal and there is no additional data available apart from individual testimony (e.g., I was upset). This contrasts with others which are public (e.g., the flood water came into my living room) and so can be tested further (through others' testimony, and checking for damp patches and tide lines on the walls.) In addition, a research design drawing on relevant debates in literature and existing studies can add to a deeper understanding of different approaches to research and flooding.

Maxwell advocates for researchers to gather empirical data by employing a 'situated stranger' approach (2012). This suggests that the best way to understand the effects of social structures and processes, and so infer their existence in the actual and real strata of Figure 4-1, is to be a stranger to them. Critical realism works by abduction, finding patterns and retroduction, understanding what may cause such patterns. Structures and processes are commonly invisible to the people who live within them, and thus stranger-ness offers a beneficial perspective to shed any implicit assumptions which exist in familiar spaces. Similarly, feminist approaches highlight the opportunities to expose power dynamics offered by entering an unknown situation (e.g Haraway, 1988). I will return to this discussion when I introduce the case selection later in the chapter.

Employing an epistemological interpretivist stance entails that the final account of research will inherently be constructed through the lens of the researcher, however much she tries to centre various viewpoints (Doucet and Mauthner, 2006). Given the experiential knowledge discussions above, that we cannot deny how experiences shape our perspectives and understanding, this

standpoint becomes relevant for all research. This criticism was responded to, particularly in feminist scholarship, through a 'reflexive turn' , where researchers engage in a "continuous process of reflexivity that alerts us to our biases in research, the relations and intricacies of power that exist between us and our participants, and the potential effects and unintended consequences of our research findings" (Kiguwa, 2019, p. 227). The subsequent subsection on positionality will discuss how I incorporates practices of reflexivity within this research project.

4.3.2. Positionality

This sub-section will position myself within the research, discussing why being explicit about positionality is important to my research approach, aspects of my positionality which have directly influenced this research, how my positionality has developed throughout this research process, and the principles which consequently underpin my research approach. This section is consciously written in the first person to emphasise the personal nature of positionality.

An explicit discussion of positionality is important to this research in two ways, relating to standpoint and power. First, the position of epistemological interpretivism presented above established that, as individuals, we all hold perspectives understanding both about a physical reality and a socially constructed world. This provides a justification for employing interviews as a method to understand people's perspectives and worldviews (discussed later) and requires an acknowledgement that I do not have an objective 'gods eve view', but I too approach this research too with my own perspective. Donna Haraway highlights the relevance of each of our partial perspectives by referring to our *"situated knowledges"* (Haraway, 1988). Haraway advocates that one aspect of responsibly disseminating knowledge is to acknowledge our partial perspective as researcher, recognising that knowledge is produced from the specific cultural, political and social contexts of the researcher (Bryman, 2012).

Secondly, feminist and other critical approaches to research recognize the initial assumptions of implicit hierarchies within society and the related flows of power (Doucet and Mauthner, 2006). As a researcher I cannot be epistemologically outside that which I am researching or be external to power dynamics. Recognizing this, I employed reflexive practice to examine dynamic power differentials between myself and my participants. The purpose of this was not to eliminate the power balance, but rather understand the contribution of various flows of power within conversations, relationships, and the broader research context. Observations of positionality and power will inform the manner in which to collect, process and represent knowledge, especially addressing procedures regarding speaking on behalf of others.

I have sought to hold a critical and reflexive stance throughout this work, which has been reflected in my practices, including reflective diary keeping and a reflective approach to my analysis and writing. Throughout this research, I have been aware of the different aspects of my identity and how they have shaped my research process. When I began this thesis, my position was made up of two key identities (alluded to in the thesis introduction): civil engineer and climate campaigner. In practice, aspects of positionality are complex, fluctuating, and underpin every element of the journey to thesis development. I will present the most relevant aspects here, but where it is appropriate, I will also refer to it up throughout the thesis from hereon.

My positionality influenced how others related to me in some interviews. For example, my status as (ex)-engineer gave me a level of respectability, although for others I possibly represented a distanced professional. This was the case for different aspects of my positionality, including my age, accent, interests. Additionally, the prospect of my eventual status as doctor was deemed advantageous, with one participant closing by saying “you've got letters behind your name, so you're a very important person”. In each interview, I tried to find common ground with my participants, for example, if they were engineers, I could draw on my experience of that, and if they were speaking as a member of the public, I spoke more about shared interests or hobbies, or our experiences of the pandemic. Being aware of aspects of my positionality in different conversations was part of a broader approach to build rapport with my participants.

As discussed in the Introduction, my previous climate-related campaigning is where I first came across climate justice. This has informed my entire stance on the project, including the conscious decision to investigate climate justice in England. Additionally, as I am British, I am well placed to investigate injustice within the society I have lived in, although I recognise that I other people have different experiences of the same system, due to power dynamics discussed above.

In addition, my positionality had and has implications for how I understand the theories I am engaging with. For example, this thesis focuses on climate justice and (strives to) centre the people most affected by flooding in England. I do not have direct experience of climate impacts and I occupy a position of relative privilege. While I acknowledge I can listen, read, and learn about theories and experiences, at times I have engaged with very different perspectives on the world. I have sought to give credit to these throughout the empirical discussion.

Furthermore, there is a fundamental tension between the presentation of climate justice as a collaborative and deliberative process and the process of researching a thesis as an individual researcher. The intellectual endeavour of this thesis is to think through what underpins a climate just approach in England, and how it may be practiced. By interviewing participants about their

experiences of flooding, I sought to assimilate ideas about what constitutes injustices related to flooding. This can be considered almost a feasibility study for the theoretical climate justice framework discussed (in Chapter 2 |) and provides a foundation from which to build a climate justice practice collectively. Therefore, I position myself as a reflexive curator of flooding experiences, achieved in chapter 5 by first letting the data 'speak for itself', before I consider implications for the climate justice framework in chapter 6.

In addition to observing interactions and surfacing assumptions, a reflexive practice facilitated an abductive research approach (Maxwell, 2012), whereby I observed and reflected upon the ongoing transformation and reconstruction of my understanding of my research, including positionality, critical realism, the research aim and questions and climate justice. This critical realist approach of a research approach which responds to theoretical and practical considerations meant that I continually developed and re-developed the research design to becomes more relevant and useful.

In light of the aspects of positionality discussed in this subsection, three principles underpinned my broad approach to this project:

1. Compassion – for everyone involved in the project and all contributions to the research, intending for participants to feel heard and ensuring that everyone I engage with is given the opportunity to share thoughts and reflections.

2. Cooperation – that decisions involving other individuals will be developed cooperatively and that fieldwork is accessible to the requirements of participants.

3. Reflexivity – in this instance: maintaining a diary for personal reflections and ensuring routes which can be welcoming of feedback and from participants regarding processes and decisions.

4.4 Research design

Within a critical realist worldview, a single case study investigating experiences of flooding within Rochdale Borough was employed to meet the research aim of operationalising a climate justice framework for investigating flooding via a case study in England. I will first turn to defining my case study approach of focusing on a local authority, before providing details about case selection and experiences of flooding in Rochdale Borough.

While case study has been a consistent research strategy for this research, the shape of the case study has evolved throughout the project. I began by simultaneously designing a case study while also undertaking documentary analysis of flood governance policy. The two strands of research evolved interactively, with one strand informing developments on the other, and vice-versa, to take

the form of a single case-study of flooding experiences in a local authority, Rochdale Borough. This research strategy was trying to overcome the puzzle of how to both scrutinize theoretical conceptions of climate justice and use the climate justice framework as an analytical tool. I resolved to use interview data for scrutinizing the underpinning theory and policy documents as the data for applying the climate justice framework. The subsequent sections of this section explain the case-study and detail how this puzzle was resolved.

4.4.1. Case study approach

There are many different approaches to undertaking case studies, and the method has historically been the subject of debates about its value, especially when a single case approach is used (Flyvbjerg, 2006). In this subsection, I will introduce my approach to case studies, engaging with key debates in the literature where required and explaining why a case study was a useful and appropriate choice for this research.

This research aligns with the position that a case study involves viewing something in completeness in order to explain the interconnectedness of aspects within case (Thomas *et al.*, 2017). As discussed in the early chapters of this thesis, flooding and its impacts are complex phenomena, and climate justice is a nuanced concept, with both requiring thoughtful consideration of aspects across time and space. Consequently, the research aim operationalising a climate justice framework for investigating flooding via a case study in England, is best researched through a case study. The development and operationalisation of the climate justice framework is appropriately studied in a case study, since interpretivist researchers appraise meaning-making and contextuality, based on emergent findings from specific people, in a specific time, place and context (Schwartz-Shea and Yanow, 2012).

As presented above, experiential knowledge is central to claims of climate justice and is best interpreted by directly interacting with those who had the experiences. Furthermore, shared perspectives about reality are often found across particular social phenomena such as within locations. These factors underlie my motivation for undertaking a case study within a bounded area. As described above, the epistemological position of interpretivism claims that it is possible to find out about phenomena, in this case experiences of flooding, through others' experiences and worldviews which are interpreted through my own. In addition to understanding experiences and worldviews, a case study approach facilitates sense-making through an understanding of the wider context, providing an opportunity for me to learn more about a context in which flooding took place and the processes involved in governing it. Case study research provides a rigorous method of investigation which also facilitates rich description.

Although there are many articles exploring theoretical developments of climate justice, Boran noted explicitly that more examples of empirical investigation of climate justice would help develop the theory, "normative inquiry into climate justice has not prioritised empirical examinations assessing the workability of its propositions" (2018, p. 35). Through an empirical case study, this research contributes to and furthers debates and understandings of climate justice by offering an empirical account of experiences of flooding in Rochdale Borough, and how climate justice relating to this topic may be theorised and applied.

Previously, scholars have disputed the value of a singular case study, claiming that single cases do not allow generalisability. Flyvberg questions this, citing the example of a single black swan providing evidence that not all swans are white; nevertheless, he argues that generalization need not be an innate goal of social science research, although he also argues that it is possible to generalize from a single case (Flyvbjerg, 2006). A criticism of generalization within social sciences, which often take a critical stance towards positivist research, is that terms of generalizability are not often aligned with the aims of social science research. Rather than thinking through positivist concepts such as generalizability and validity, interpretive epistemology suggests that knowledge claims can be demonstrated as valid "in terms of how adequately the researcher deals with plausible alternatives to these conclusions or interpretations" (Maxwell, 2012, p. 70). My case study approach facilitates an in-depth appraisal of experiences of flooding and flood governance in Rochdale Borough, addressing considerations of validity through multiple accounts of flooding to examine the plausibility of climate justice claims. While seeking to develop a solid understanding of context in order to inform theoretical conclusions, critical realists do not claim 'holism' from case-study research but focus on identification of particular processes in order to shed light on them (Ackroyd and Karlsson, 2014). In this research, I seek to examine experiences of flooding to shed light on the practicability of my theoretical approach to climate justice.

This case serves two purposes: instrumental and exploratory (Baxter and Jack, 2008, p. 548). It serves an instrumental purpose, to provide a context in which to operationalise the theory of climate justice, while it ultimately seeks to explain the compatibility of climate justice with people affected by flooding. Moreover, since the climate justice framework in this thesis was developed using established theories, this case study will help to not only understand and explain specific perspectives and opinions within the case, but also provide an opportunity to generalise more broadly for a wider understanding of applied climate justice. The next subsection will discuss how I selected the case of Rochdale Borough for this research.

4.4.2. Case study selection

The case was selected using specific criteria, in order to maximize the utility of information (Flyvbjerg, 2006), aiming to investigate a typical case of flooding-related climate injustice in England. The reason for this was to understand the (possible) impacts of flooding on people in England to strive for a climate approach justice which is relevant for all people in England. The logic employed is that if the climate justice framework is appropriate for one case, then it provides a foundation from which to develop other cases.

In my case, it was important to interview people from within a local authority, because flooding is a phenomenon that is shaped by both its physical surroundings and governance structures. In England, flood policies are re-enacted through local authorities so experiences of flood governance *within* one local authority are more shared than they would be with experiences *across* other local authorities who may practice flood governance differently. However, local authorities must all follow national guidance and thus can be compared to one another. By choosing a case study of a local authority, it was also possible to interview key flood governance actors who work together across different aspects of flood governance. Ultimately, the choice of local authority as 'the unit of analysis' results in a research project that can not only meet the aim of operationalizing a climate justice framework, but also offer detailed reflections on experiences of flooding and governance.

Maxwell claims that research design is a real and interactive entity which influences and is influenced by both previous conceptions I have as a researcher, and the actual implementation of the research 'on the ground' (Maxwell, 2012). For case selection, I developed a list of criteria from which I developed an initial shortlist, but the final choice of Rochdale Borough was influenced heavily by which contacts from the shortlist were available and willing to help and work with me. The next few paragraphs recount this journey. The initial list for case selection was made up of both methodological criteria, (important to the theoretical and conceptual elements of the research design), and pragmatic criteria, which were important so that I could achieve the research. It was necessary that my case study authority had:

1. A risk of surface water flooding (later amended to be any flood risk) – from Environment Agency data, local authority policy documents and local media reports (methodological)

2. Locations areas within top two deciles of deprivation –from IMD data and neighbourhoods mentioned in council documents (methodological)

3. Proximity to Sheffield (commutable, later irrelevant due to virtual nature of fieldwork during the pandemic) (pragmatic)

The case selection process was an evolving project. I developed a map to identify possible local authorities, using two datasets. The map highlighted areas of the intersection between flood risk and deprivation - criteria 1 and 2 in the list above. Initially, I considered only surface water (pluvial) flood risk, since it is the type of flooding least well covered in policy (see Chapter 2 |). However, the available data for this turned out to be far from ideal due to its scale and granularity. Furthermore, and partially a result from the localized nature of pluvial flooding, local authorities' records characterise pluvial flooding differently: definitions can range from water in the garden to a certain depth of water internally. In summary, the dataset provided eight ideas for case study locations – Liverpool, Bradford, Leeds, Hull, Sheffield, Derby, Nottingham, and Rochdale - but in the end, it was the starting point.

On the basis of a preference for 'researching as a stranger' and having lived there for 5 years, I discounted Sheffield as an option. I also discounted Hull on the basis that it has, and continues to be, an area resulting in lots of research. While I recognize that undertaking research there could have added to an already rich literature, I felt that exploring a different location could potentially offer an opportunity to investigate and compare the similarities and differences between the two cases. I contacted relevant officers in Liverpool, Nottingham, Bradford, and Leeds, and only heard back from a contact in Liverpool who told me that after a Pathfinder Scheme introduced to reduce the pluvial flood risk, Liverpool had not experienced significant flooding for several years. The contact put me in touch with Laura from the National Flood Forum, who ultimately became a gatekeeper, providing contact with many of my participants (which I will discuss below).

In March 2020, I attended the NFF's national conference, just as the Covid-19 pandemic was beginning to disrupt daily life. I met with Laura and flood groups from across England and heard about their experiences of flooding. I revisited the initial list of criteria based on accounts of flooding in Rochdale Borough and expanded the consideration of pluvial flood risk to account for any flood risk. Rochdale Borough met all the new criteria, despite not being highlighted on my original map (see blue circle).

This section has outlined the case selection process, describing the initial criteria that were used to generate potential cases and describing the journey taken to result in my case choice of Rochdale Borough. The next section will provide a brief overview of Rochdale Borough.

4.5 Case study context: Rochdale Borough

This section provides some background context for the case study location of Rochdale Borough and my participants. The content presented in this section provides the context for later discussion in this chapter and throughout the empirical chapters.

4.5.1. Rochdale Borough

Rochdale Borough is one of ten local authorities within the Greater Manchester Combined Authority (GMCA). Historically, Rochdale Borough was an industrial area and is now characterized by logistics, manufacturing, and digital and creative sectors (Rochdale Development Agency, 2022). There are also significant commuters due to good connectivity with proximate cities, such as Manchester and Leeds.

The industrial past of Rochdale has left a legacy of disused water infrastructure which has implications for flood risk. Rochdale Borough had a thriving wool industry in the past which was widely powered by water mills. Many of these water mills have been repurposed or replaced, but some of the underground water infrastructure, such as culverts, remain. The stretch of the River Roch in the town centre of Rochdale was culverted between 1904 and 1924 in order to eliminate the smell from raw sewage, and to make space for tram infrastructure (Connelly, Hanania and Kiernicka-Allavena, 2019). Between March 2015 and June 2016, a central section of the River Roch in Rochdale town centre was uncovered, in part to reduce flood risk (VolkerStevin, no date).

The current sectors of logistics, manufacturing, and digital and creative, as well as commuters, all rely on transport infrastructure to function, including tram and rail networks and roads. Other key infrastructure includes healthcare organisations, drinking water supply networks, drainage networks, and energy grids. Many of these constitute 'critical infrastructure', which, if affected (e.g. by flooding) could have, "major detrimental impact on the availability, integrity or delivery of essential services" (Centre for the Protection of National Infrastructure, 2023 no page number). As discussed in Chapter 2 |, flood risk is significant not only for homes but also for (critical) infrastructure which has health, financial, transport, and other impacts.

Rochdale Borough deprivation statistics

As I explained in the case study selection subsection, Indices of Multiple Deprivation (IMD) were a key characteristic in my choice of local authority case study. This is due to the likelihood that residents within a deprived local authority may have lower capacity to manage and respond to flooding. This section presents the deprivation data relating to Rochdale Borough in order to provide a context for the subsequent empirical chapters and discussion.

Before delving into the statistics, It is significant to highlight that the use of the IMD does not reflect any assumptions about residents; rather the language of deprivation aligns with more critical takes on vulnerability studies which "question the reductive association of vulnerability with weakness and helplessness" (Cole, 2016, p. 274). Cole highlights how vulnerability can be uncritically applied as an individual theory which makes claims on behalf of the people that it labels as vulnerable. By

engaging with deprivation and vulnerability, I do not seek to claim that any residents or participants "should embrace their vulnerability in the sense of accepting it as fate nor that the researcher engages in a quasi-therapeutic relation with the informant" (Eriksen, 2022, p. 11). Indeed, I concur with Erikson that "this would be condescending rather than compassionate" and would rather take the role of "a compassionate vulnerability researcher [who] engages deeply with the informant's lived experience of vulnerability" (Eriksen, 2022). Referring to the practices of reflexivity embedded within climate justice discussed earlier, I seek to use deprivation statistics to identify areas where residents may experience the biggest challenges when managing or responding to flooding. Eriksen calls for 'compassionate climate change research' in which researchers do not "pretend to be able to disconnect myself from those [whose experiences] I am studying nor from my personal self" (Eriksen, 2022, p. 2 brackets added by author). Following this, I acknowledge how personal concerns for our collective (increasing) vulnerability to climate change was a motivation for this research.

According to census data, Rochdale Borough has a population of 223,800 as of 2021, and is more densely populated than the national average (ONS, 2022), indicating a relatively urbanised area. Rochdale Borough is the 15th most deprived (out of 314 in total) local authority in England (ONS, 2021). The ranking of multiple deprivation includes the combined impacts of "seven main types of deprivation … income, employment, education, health, crime, access to housing and services, and living environment" (Mclennan *et al.*, 2019). For the purpose of this research, which asserts the interconnectedness of aspects of deprivation, I used the combined deprivation statistics.

Rochdale Borough has 134 Lower Layer Super Output Areas[5] (LSOAs). I interviewed residents from six neighbourhoods[6] within Rochdale Borough, the boundaries of which are approximately depicted in Table 4-1, along with key watercourses (denoted by dark blue lines). The neighbourhoods were not sought out but arise from being the places where my participants live (details of participant selection is discussed in the next subsection). The purpose of this subsection is to present a summary of the deprivation statistics for each neighbourhood is given below.

Table 4-1 Deprivation indicators for relevant neighbourhoods within Rochdale Borough

Neighbourhood	Deprivation indicators
Norden	Amongst 30% least deprived neighbourhoods nationally
Wardleworth	Amongst 10% most deprived neighbourhoods nationally
Turf Hill	Amongst 10% most deprived neighbourhoods nationally
Milnrow	Mix of LSOAs:

[5] defined by the ONS as areas with an average population of 1500 or 650 households

[6] Neighbourhoods here does not refer to a specific definition but is rather the locality in which my participants live, where I interviewed several participants from one area, I have ensured that the LSOA's reflect the appropriate area

	Amongst 40% most deprived neighbourhoods nationally Amongst 30% least deprived neighbourhoods nationally
Littleborough	Mix of LSOAs: Amongst 50% most deprived neighbourhoods nationally Amongst 30% most deprived neighbourhoods nationally
Hollingworth Lake	Amongst 50% most deprived neighbourhoods nationally

The neighbourhoods where my participants live represent a range of deprivation statuses. Wardleworth and Turf Hill neighbourhoods are within most deprived decile nationally, Milnrow and Littleborough have a mix of more and less deprived areas, the Hollingworth Lake area occupies a middle decile, and Norden is the neighbourhood of least deprivation. These descriptors of each neighbourhood are elaborated later, alongside accounts from participants, in the empirical discussion.

Figure 4-2 provides an outline for key watercourses relating to participants' experiences, with each neighbourhood of interest having at least one watercourse, although it is pertinent to recall that flooding can arise from several different sources, not always necessarily close to a watercourse. Notable flooding within Rochdale Borough is presented in the next subsection.

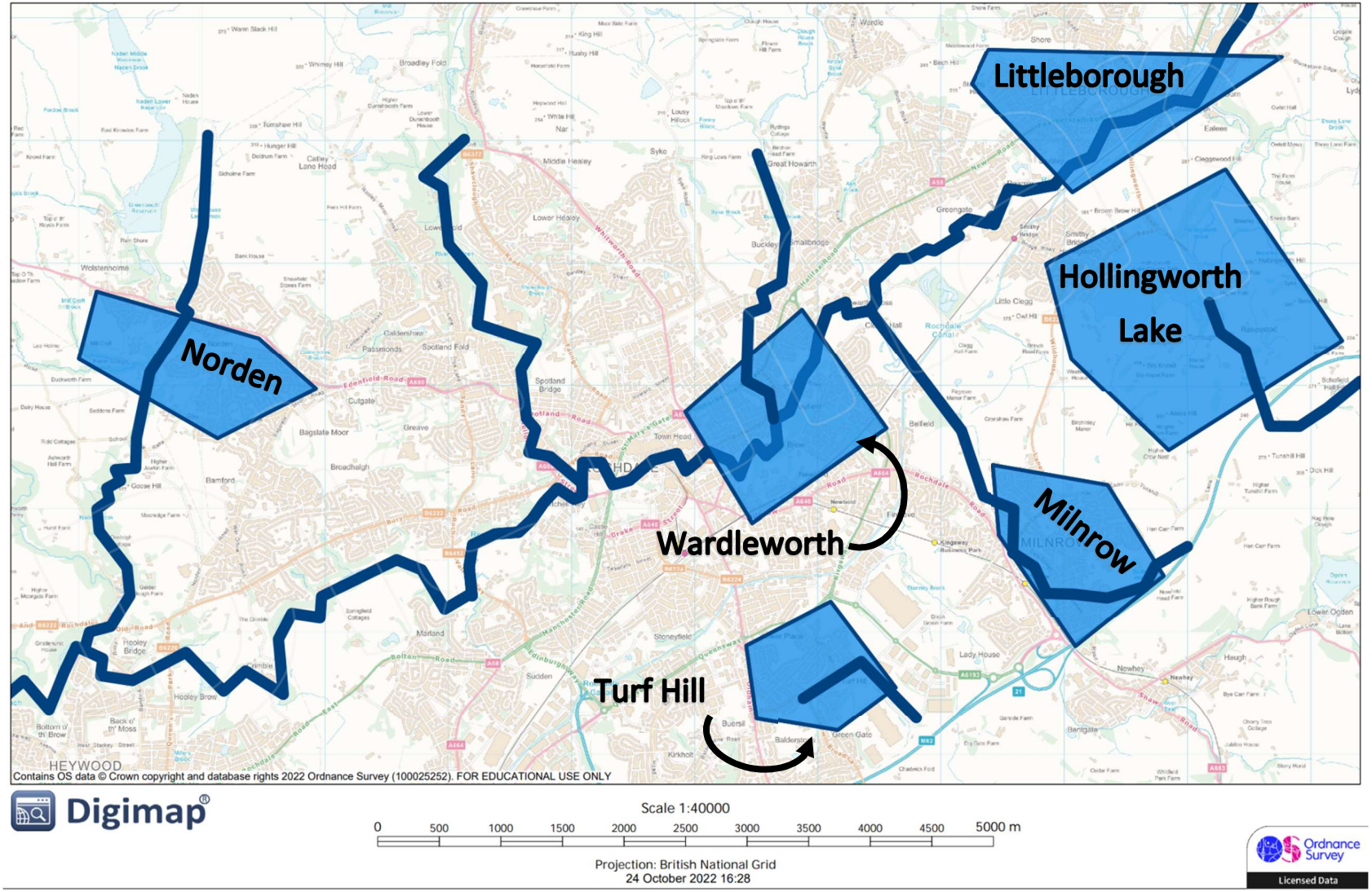

Figure 4-2 Participants' neighbourhoods within Rochdale Borough Council (source: author)

Flooding in Rochdale Borough

Flood risk in Rochdale Borough arises from several sources, for example fluvial and pluvial, and properties with higher flood risk are likely to have a combined risk. Rochdale Borough's Flood Risk Management Strategy estimated that, as of September 2013, there were 938 properties at high risk of fluvial flooding, and 1860 residential and 1105 non-residential properties at risk of pluvial flooding (Rochdale Borough Council, 2014). As discussed earlier, predicting pluvial flood risk is more complicated due to the localized nature of it, so this figure is expected to be lower than the actual number with pluvial flood risk. The strategy identifies Littleborough, Milnrow, and Wardleworth as areas of flood risk, including from flash-flooding.

The borough has a mix of urban and rural areas and sits within the narrow upper valley of the Irwell catchment, which is characterized as 'flashy' (Environment Agency, 2009b). Steep-sided and narrow valley characteristics result in floodwater from precipitation moving rapidly down the catchment, onto roads and into rivers, leading to flash-flooding. The flashy nature of the area can render flood alerts and warnings ineffectual as there is not sufficient time to warn people. At the top of the valley, near Littleborough, Rochdale Borough borders Todmorden in Calderdale, which also has a history of significant flooding for similar topographical reasons. The authority boundary has an impact for flood governance, which will become evident later in the empirical discussion.

Rochdale Borough has a history of significant flooding events, notably in 1991, 1995, 2008, December 2015 (Boxing Day), March 2019, July 2019, November 2019 and February 2020, and January 2021 (The Flood Hub, 2022). According to the Section 19 reports (which present the results of an investigation required by Lead Local Flood Authorities after significant flooding events) the flooding of Boxing Day 2015 was particularly disruptive due to the already saturated ground (Greater Manchester Combined Authority, 2016). It was found that 324 properties were internally flooded across Rochdale Borough, see Table 4-2, and 18,550 properties were affected by power loss. It is useful to provide a few more details of this event as it is the backdrop to many of the experience of being flooded which are recounted in the empirical chapters below.

Table 4-2 Locations affected by internal flooding during Storm Eva, Boxing Day 2015 (Greater Manchester Combined Authority, 2016, p. 18)

Location	Main River	Ordinary Watercourse	Sewer	Surface Water	Grand Total
Belfield	10	0	0	0	10
Heap Bridge, Heywood	10	0	0	0	10
Hooley Bridge, Heywood	20	0	0	0	20
Littleborough	158	0	0	17	175
Milnrow	1	0	1	9	11

Rochdale (disperse properties)	0	0	0	8	8
Rochdale Town Centre	54	0	0	0	54
Wardleworth and Hey Brook	35	1	0	0	36
Rochdale	288	1	0	34	324

There are some limitations on the statistics within the report. Section 19 reports only take account of internal property flooding for clusters of 5 or more properties, so it is likely that 324 is an underestimate. In addition, the report defines internal flooding as "flooding to ground floors of properties, including attached garages or outbuildings, and basements or cellars if used as living accommodation … Flooding of cellars has not been included within statistics for 'internal property flooding' unless they are habitable accommodation" (Greater Manchester Combined Authority, 2016, p. 17). Therefore, Section 19 reports may only capture 'flooding' as defined by the specific interpretation of the local authority and not count instances of repeat localised flooding, seeping groundwater or other. One rationale for not investigating a particular 'flood' was to leave space for other instances of flooding to emerge.

Beyond properties affected by flooding, there were other significant disruptions from the Boxing Day 2015 event. Rochdale Borough's office was flooded, damaging computer servers which were key for flood response and coordination. A new base was established at the town hall Across Greater Manchester, the flooding led to the following wider disruption and damage:

- bridges were damaged,
- tram, rail and road transport links were disrupted (although services were already reduced due to Boxing Day schedules),
- gas supply was disrupted through low pressure,
- watercourse assets, such as boundary walls and gabion baskets, were damaged
- wastewater treatment works were flooding
- water supply was lost or reduced due to power failure
- erosion to the canal banks

The report highlights the probable, but unknown at the time, mental health impacts of flooding. It also states that "many people affected by flooding were highly vulnerable due to health, age, income as well as other factors" (Greater Manchester Combined Authority, 2016, p. 23). This recognises the intersection of flooding with vulnerability, but makes no connection between how certain populations are made vulnerable through systemic decisions and choices which produce 'winners and losers' (Scoville-Simonds, Jamali and Hufty, 2019).

The Section 19 report also claims that "Local Authorities and the Environment Agency have carried out extensive engagement with affected communities. Within three days of the flood 36 of the communities affected flooded were visited by Local Authority and Environment Agency staff and many more in the weeks following. Local Authorities have been meeting many hundreds of people affected by flooding in order to administer grant payments to householders and businesses for community recovery and property resilience, and to provide ongoing support to vulnerable residents" (Greater Manchester Combined Authority, 2016, p. 29). As many of my participants were affected by the Boxing Day flooding, the empirical chapter presenting flood governance interactions will examine the experience in more detail.

4.5.2. Fieldwork participants

This subsection summarises how participants within Rochdale Borough were identified and recruited and concludes with a summary of participant characteristics.

Participant criteria

Once I had a case location, I began to develop a participant selection plan. I developed the criteria that participants should be at least one of the following:

1. Residents of Rochdale Borough who have been personally affected (self-defined) by flooding in Rochdale Borough
2. Flood governance actors whose work is in Rochdale Borough

The term 'residents' refers to participants who were affected by flooding in their personal life. For the residents', investigating Rochdale Borough was relevant because the same policy affects each of them. Flood governance actors refers to participants who work within an aspect of flood governance that relates to or covers, at least in part, Rochdale Borough. I purposely did not focus on a 'particular' flood event, because as discussed in Chapter 2 |, conceptualizing flooding as a single, bounded event may exclude perspectives. Furthermore, since climate justice is founded on deep-rooted and systemic concerns, considering an ongoing experience of flooding was important.

Participant recruitment

Participants were recruited using snowball sampling through initial contacts shared by a gatekeeper. I first made contact with my gatekeeper, Laura, from the National Flood Forum (NFF), via email. I then met her at the NFF Conference in March 2020. We discussed my research, and she agreed to introduce it to residents and flood governance actors that she worked with. She explained my research to potential participants and asked if they were happy for me to contact them. For those who were, I reached out via email or telephone with the information sheet and consent form. After the interview with each participant, I asked them if they had any contacts who might be interested in

taking part in the project, which yielded several more contacts. This was the first interviewing phase and ran from July to September.

During the Autumn of 2020, I carried out an internet search to identify and contact additional participants, disseminating a poster summary of my research, shown in Figure 4-3, which resulted in some successfully recruited participants. However, this had a very low success rate and no one got in contact without a direct email from me. This may partially have been due to the pandemic or due to my sampling approach. As I will explain in the next subsection, my participants are not representative of Rochdale Borough. However, as will also be discussed, representativeness is not necessarily desirable as I will explain. Rather, I will argue why my participants insights are valuable for enabling me to operationalize a climate justice framework for investigating flooding.

Figure 4-3 Online poster for recruiting participants (source: author)

Participant characteristics

Table 4-3 below summarises the 24 participants that I interviewed for this research project: comprised of 15 people fulfilling the category of residents and 10 of flood governance actors. One participant fitted under categories, as she lives in Rochdale Borough and works in flood governance

response. All other participants were one category or the other flood governance. The combination of flood governance actors I interviewed provided insights into key flood governance policy areas and processes. This subsection is concerned with discussing the characteristics of participants and arguing why representativeness is not central to this research design. The next section is concerned with the details of data generation and analysis.

Table 4-3 Table of participants

	Pseudonym	Area/Organisation	Participant Type	Role (if flood governance actor)	Interview group size
1	Fakhira	Wardleworth	Resident	n/a	2
2	Shafana	Wardleworth	Resident	n/a	2
3	Simon	Littleborough	Resident	n/a	4
4	Matthew	Littleborough	Resident	n/a	4
5	Gail	Littleborough	Resident	n/a	4
6	Evan	Littleborough	Resident	n/a	4
7	Susan	Milnrow/Rochdale Borough Council	Resident and flood governance actor	Forward Incident Officer, Rochdale Borough Council	1
8	Maureen	Turf Hill	Resident	n/a	1
9	Janet	Norden	Resident	n/a	1
10	Ian	Littleborough	Resident	n/a	2
11	Fiona	Littleborough	Resident	n/a	2
12	Azeem	Wardleworth	Resident	n/a	1
13	Shaun	Hollingworth Lake	Resident	n/a	2
14	Carol	Hollingworth Lake	Resident	n/a	2
15	Kathy	Wardleworth	Resident	n/a	1
16	Brenda	Norden	Resident	n/a	1
17	Laura	National Flood Forum	Flood governance actor	Intermediary	1
18	Fred	Rochdale Borough Council	Flood governance actor	Drainage engineer, Rochdale Borough Council	1
19	Hilary	Greater Manchester Combined Authority	Flood governance actor	Partnership/liaison between RFCC and LLFA's	1
20	Gordon	Rochdale Borough Council	Flood governance actor	Lead for the Lead Local Flood Authority	1
21	Danny	United Utilities	Flood governance actor	Flood risk partnership manager	2
22	Trevor	United Utilities	flood governance actor	Drainage strategy and planning manager	2
23	James	Environment Agency	flood governance actor	Senior advisor for the partnership and strategic overview team	1

24	Ellen	Flood Re	Flood governance actor	Transition team (previously actuarial team)	1

This project focused on people affected by flooding in Rochdale. The demographic profile of people so affected is not known (and arguably, cannot be, as being 'affected by flooding' is defined by the individual). It is therefore not possible to sample representatively from this population. I did not ask participants for any data regarding their personal characteristics as I was not seeking representativeness, however I know for certain that I did not interview anyone under the age of 18 as outlined by the ethics application and consent form. Where relevant, I will bring in relevant literature and theory to elucidate some further meaning regarding the voices not included in this research. Moreover, given existing literature which examines the compound impacts of various structural inequalities on these characteristics (e.g. Enarson and Fordham, 2001), identity characteristics (such as age or race) are deemed an important area for future investigation and an area to reflect on throughout the discussion, where relevant.

I use the terms 'residents' and 'flood governance actors' to distinguish between people personally affected by flooding in Rochdale Borough Council (residents), and people working in flood governance affected Rochdale Borough Council respectively. While it is likely that people who are not residents of Rochdale Borough have also been affected by flooding, for example through disruption to amenities or infrastructure, I only spoke with residents. This was partly due to methodological limitations of the pandemic, and I return to the implications of this in the conclusion.

Later, when I theorise more widely about what the findings might suggest for people affected by flooding more broadly than Rochdale Borough, I revert to the term 'people'. When using the term 'people' or 'the public', although I hope to evoke and foster a sense of plurality, uniqueness, and individuality (Farinati and Firth, 2017) within a broader shared category.

4.6 Data generation and analysis

This section will provide details of the ethics approval, data generation, and data analysis for my fieldwork. Despite Schwartz-Shea and Yanov's interpretivist, rather than critical realist, stance, I employ their terminology of 'data generation' (2012) in the recognition that data does not exist, waiting to be collected, but is generated through the research process. In addition, as part of the abductive approach above, data analysis often overlaps and intersects with the data generation process. I discuss both data generation and analysis within this section, but separately, making references to the overlaps where appropriate. The timeline of my fieldwork in Figure 4-4 helps to illustrate this process.

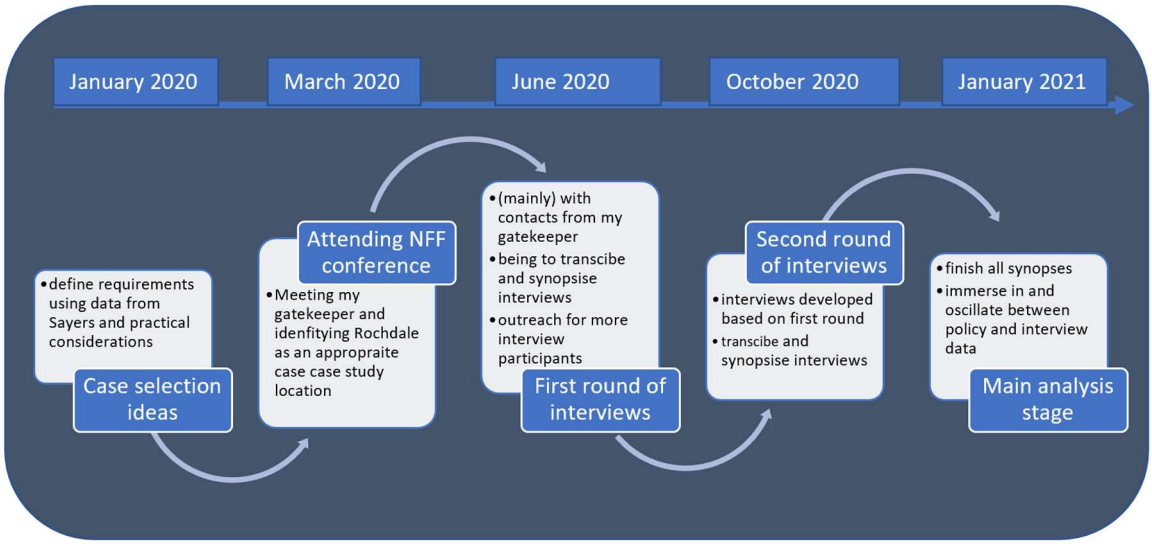

Figure 4-4 Fieldwork timeline

4.6.1. Ethics

The University of Sheffield delivers training, guidance, and feedback on ethical procedures in order to minimize the potential for harm or distress which can arise from poorly designed research projects with participants. Although my participants were not deigned vulnerable by characteristic, the sensitive nature of recalling potentially distressing memories of flooding was a concern. I developed a signposting resource in case of any difficult interviews, but it was not needed. Before my fieldwork, I submitted an ethics form to the university which was reviewed and passed with some minor amendments. Due to the Covid-19 pandemic, the ethics form had contingency plans for both face-to-face and virtual interviews.

The formal ethics procedure provides a solid foundation from which to execute high quality research, but it does not end there. I endeavoured to consider ethical implications within each interaction with (potential and confirmed) participants, embedding additional practices, such as synopsis development, into my research. I will discuss these as they arise in the following sections.

4.6.2. Data generation

Most data generation for this research project was through semi-structured interviews with residents and flood governance actors, discussed below. Two flood governance policy documents were analysed, and reflexive data was generated through the practice of diary-keeping during fieldwork.

Interviews

In total, I interviewed 24 people between June and December 2020. Due to national Covid-19 restrictions, all the interviews were undertaken virtually. Interviews typically lasted around an hour. Most interviews were either undertaken with one or two participants, see Table 4-3 (p. 87). Where interviews were with more than one participant, the participants were already familiar with one another. The interview process is detailed below.

On initial contact with participants, I shared an information sheet (see Appendix I: Information sheets

and consent form (see Appendix II: Consent form

). The forms differ depending on whether the participant was a resident or flood governance actor. If they were willing to participate, I asked them to return the consent forms. In some cases, participants were unable to use the technology in order to fill these out. In these cases, I went through both forms with them and verbally recorded consent to both the participation and recording in the interview.

Interviews were conducted virtually, either on the telephone, with audio synchronicity, or using videoconferencing software, with audio-visual interactivity and textual synchronicity. The medium used depended on participants' preferences. Some interviews were undertaken in groups of known people, such as with a flood group, neighbours, or partners, and some interviews were undertaken individually. I used two recording devices for each interview to ensure that I did not lose any data.

I started each interview by checking that participants were satisfied with the information sheet, consent form, and interview approach. I then gave a brief overview of my research and asked if they had any questions before we went ahead to the main part of the interview. I had two different schedules depending on whether the participants were residents or flood governance actors. I practiced the schedules on two friends before undertaking my first interview with my gatekeeper, who I was familiar with by that point.

The interview schedule addressed three main topics, differing for each participant 'type', see

Table 4-4. More specific questions were used to explore details within each topic for the interview schedule.

Participant type	Residents	Flood governance actors
Key interview topics	What are your experiences of flooding? What is your understanding of flood governance in Rochdale Borough? How could experiences of flooding be better?	What is your role and responsibilities for flood governance in Rochdale Borough? How does flood governance policy work in Rochdale Borough? How could flood governance policy in Rochdale Borough be improved?

Table 4-4 Key interview topics for residents and flood governance actors

Participant type	Residents	Flood governance actors
Key interview topics	What are your experiences of flooding? What is your understanding of flood governance in Rochdale Borough? How could experiences of flooding be better?	What is your role and responsibilities for flood governance in Rochdale Borough? How does flood governance policy work in Rochdale Borough? How could flood governance policy in Rochdale Borough be improved?

For interviews with residents, the first two topics focused on experiences of flooding, whether recent or some years beforehand. I did not want to ask leading questions, so I deliberately avoided using justice-related language when asking questions related to the final topic. Instead, I focused on eliciting how experiencing flooding could be less bad, or idealized responses to flood governance. For the flood governance actors, interviews were more focused on their formal role and responsibilities, and how these fit into a broader governance system. The final question aimed to uncover what, if any, improvements could be suggested for flood governance in order to elucidate existing challenges.

My interview practice developed over time to investigate similarities and differences between and across residents and flood governance actors, as I built on the ideas arising from previous interviews. In addition, I became more confident with the types of questions to ask as I began to develop a richer understanding. The interviews both reinforced and disproved assumptions that I held, in addition to raising new considerations. During the iterations of returning to synopses for analysis, I was transported back to the interview: where I was calling from, what the weather was, how the pandemic was unfolding, participants' voices, and internet connections. The connections that I made with participants through them sharing their experiences have stayed with me. When there have been national flood warnings since, I have felt concerned for the participants who told me how they worried.

I concluded each interviewing by thanking participants and asking if they had any further questions, before explaining the next stages to them. The stages involved transcribing each interview, developing them into an interview synopsis with a page of key points and then giving one month for participants to offer feedback, reflections, or supplement their accounts. The process of sharing synopses was intended to confirm that I had correctly captured participants' accounts and provide participants with an extra opportunity to consent. If participants used the month for feedback, I sent participants reminders after two and three weeks, and in some cases I undertook alterations over the phone. The majority of participants made very few changes, which were usually grammar. One participant made significant changes but gave the explanation that it was because reading it back made them feel self-conscious.

Documents

Prior to, and alongside, interviewing my participants, I began the process of policy document analysis. During the literature review stage and development of my research proposal, I read many flood governance policy documents. This wide reading provided a degree of familiarity from which to identify policy documents that could be constructively analysed using the climate justice framework. My participants most recent experiences of flooding occurred between 2015 and 2020. To understand their experiences of flood governance compared to what 'should have happened' according to policy, the documents selected were the national and regional flood governance policies in operation, at the time of participants' experience:

- The National Flood and Coastal Erosion Risk Management (FCERM) Strategy, 'Understanding the risks, empowering communities, building resilience', (Defra and Environment Agency, 2011)
- Rochdale Borough's regional Flood Risk Management Strategy (Rochdale Borough Council, 2014)

The policy documents occupied different roles during my research. Prior to the interviews, both policy documents, along with others, provided initial context for flood governance. A wide reading of flood governance policy documents provided me with an understanding of how flood governance in England has evolved since the early 2000's, and how it connected to broader political motifs, such as Blair's sustainable development and Cameron's 'Big Society'. Connecting flood governance to a broader political context helped me to understand how it interacts with other policy areas. In addition, the documents outlined how flood governance should function, which influenced my development of my flood governance interview questions regarding flood governance roles and responsibilities for flood governance actors. Alongside the interviews, I revisited the policy documents to analyse them for themes of climate justice, as well as reflecting upon the extent to which

participants' accounts reflected what should have happened. The accounts of participants provided a partial picture of the flood governance process, which did not enable me to comment on the extent to which flood governance policy was delivered as intended. After the interviews, when I had examined the extent to which the climate justice framework was reflective of the types of concerns of my participants, I returned to the policy documents to analyse them systematically. This was informed by the tenets of the climate justice, which I employed as an analytical framework. It was at this stage that I became aware of the relevance of epistemic justice as a tenet of climate justice, due to the absence of inclusion of residents' experiences within policy. This realisation led me back to climate justice theory to develop my climate justice framework.

Fieldwork diary

In the run up and during data generation and analysis, I kept a fieldwork diary. I used it to capture things that jumped out at me or felt like new considerations. I wrote in it intermittently, to capture thoughts about how the data generation process was going, including successes, frustrations, and challenges. I also wrote in it every time I did an interview, reflecting on how the interview felt and any key learnings. Some of these entries were very short, whereas others prompted long reflections. Post-data generation, the diary has provided me with a record of the evolution of my abductive research approach, capturing key stages of the ongoing redevelopment of concepts and theory. I do not explicitly refer to it in any of the empirical chapters, but through returning to these entries recounting surprises or particular learning points, it has informed the findings that I will share in the empirical sections.

4.6.3. Data analysis

This section provides details of the analytical process. The analysis oscillated between fieldwork interviews and policy documents, considering them separately and exploring the relationship between them. As indicated in the fieldwork timeline (p. 68), data generation was influenced by simultaneous data analysis. Throughout this process of iteration, I continually returned to the question of 'what climate justice might look like (or not) for participants in Rochdale Borough?' Thus, each oscillation resulted in an opportunity for reflexive practice, to realign with the research aim and deepen the interpretative validity. During the process, I used my fieldwork diary to capture moments of surprise and frustration, as well as revisit remarks from interviews that had stuck with me as being important, even before I was able to connect the empirical and theoretical to understand why.

Interview analysis

As mentioned above, all interviews were transcribed verbatim and then abridged into a summary which was checked and agreed with each participant. This summary stage provided an intermediary between data generation and analysis, acting almost as a co-production stage. I provided a summary overview in the form of a page of key bullet points highlighting key aspects of each interview. All interview summaries were saved in an NVivo project along with policy documents before being coded. While I used NVivo for coding purposes, I iterated back and forth between the summary files, word documents, and paper copies. The ongoing iteration of the analysis process resulted in a thorough familiarity of the interview data.

I took an abductive approach to coding in line with critical realist scholars such as Hoddy, Fletcher, Wiltshire and Ronkainen (2017; 2018; 2021) meaning that I used existing knowledge and observations of the codes to lead me to a best prediction, recognizing that this could be fallible. The opportunity for the best guesses to be fallible is reduced by practicing interpretive credibility.

In the spirit of surfacing iterations described above, I undertook several analytical attempts that did not yield meaningful findings from the data. However, each of these three attempts was valuable in surfacing assumptions that I held about the direction of the research. For example, to begin with I directly coded the interview data using the theoretically informed codes of the climate justice framework. This yielded an abstracted accounts of participants' experiences of flooding by 'cutting' each story into brief pieces of information. This approach abstracted the experiences of flooding, especially how elements of the experience can act to enforce, compound, or pull against other elements. From this, I oscillated in the opposite direction to a narrative analysis, rewriting short stories that captured the interconnectedness within each participants' story. This approach, rich in detail though it was, did not have any clear links to the climate justice framework.

I settled on a coding approach which yielded descriptive codes within two key areas of the interviews: descriptions of flooding experiences, and descriptions of experiences of flooding governance. The themes were initially organized narratively or chronologically, tracing the moments told in the stories of flooding, for example 'before the flood' or 'meeting with flood governance actors'. While participants had experiences of different flood events, whether public or flood governance actor, there were similarities in the types of experiences across these, such as most residents referring to governance interactions as 'passing the buck'. This initial, descriptive coding is presented through the structure of chapter 5.

The descriptive codes were then re-organised and scrutinized according to theoretically informed codes arising from the climate justice framework. The 'applied' guiding questions for the

analytical framework are presented below in Figure 4-5, and they are left floating in the diagram to leave space for reflecting on how they are interconnected. The codes were developed from the climate justice framework, adapted slightly to reflect the case study context. Generic terms, such as 'people' were made more specific to reflect the residents and flood governance actors. When both groups were considered, I referred to them broadly as participants. The tenets of recognition, procedural justice, and capabilities approach include analytical guiding questions which were further shaped to best address RQ2 and RQ3. The specific format has been slightly altered to reflect this where it arises.

The purpose of this second coding stage was to highlight similarities and differences between accounts of flooding by affected residents against theoretically informed ideas of climate justice. This process and the resulting discussion form the subsequent two empirical chapters.

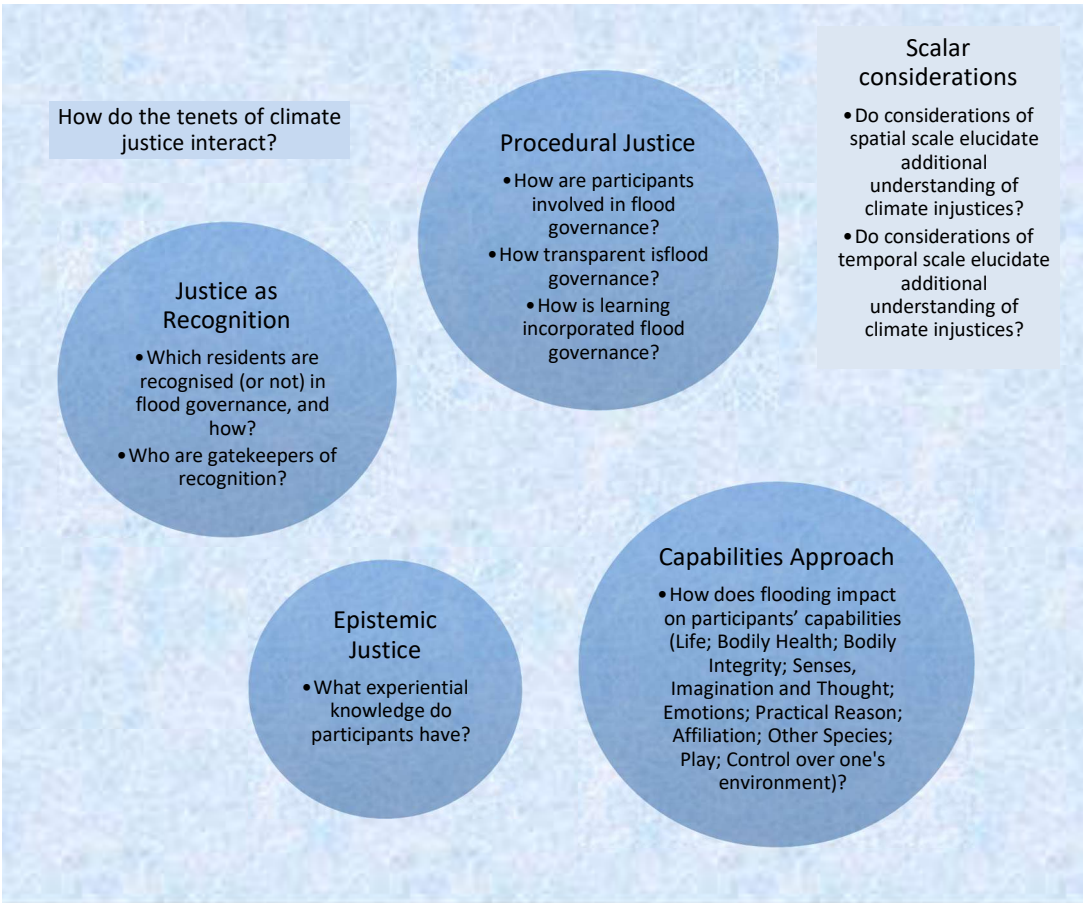

Figure 4-5 Analytical climate justice framework

Policy document analysis

There are many different methods that can be used for analysis, and even more names that are given to describe these types of analysis. In undertaking this research design, I considered four analytical approaches for studying the policy documents: content analysis, discourse analysis, thematic analysis, and documentary analysis. In the next paragraphs, I will give a short overview of each type and justify my choice of thematic documentary analysis.

Very broadly, content analysis can be understood to have an emphasis on the content of the text and the language used within it, with analysis being undertaken at the document 'micro-level' (Braun and Clarke, 2006, p. 98). I am interested in how the policy documents relate to the wider context of flood experiences which could not be achieved with such a focused level of detail.

Discourse analysis has many different interpretations, including analysis of environmental policies by Sharp and Richardson. The authors employ Foucauldian discourse analysis suggesting it as "interprets discourses as multiple and competing sets of ideas and metaphors which embrace both text and practice" (Sharp and Richardson, 2001, p. 8). Clearly this approach can span beyond the text to consider the broader context, but it relies on engaging with existing discourses in the literature. Since my aim was to operationalise the climate justice framework, this approach was not compatible.

Thematic analysis can be defined as "a method for identifying, analysing and reporting patterns (themes) within data" (Braun and Clarke, 2006, p. 79) and can be applied across different ontologies, including realism, and employ a range of theories, including climate justice. Thematic analysis therefore offers a flexibility which can systematically analyse documents in a way consistent with both my research paradigm of critical realism and through an analytical climate justice framework.

Documentary analysis can use thematic or content analysis to look specifically at documents and highlights certain considerations for using documents as data. Bowen (2009) notes that the key advantages of documentary analysis are that it: embellishes a case study, describes context, reflects a snapshot of time, and corroborates other types of data. Public documents are also easily accessible and therefore a timely addition to other data. However, they also note that even official documents must be considered as products of their context: both the authors and the broader socio-political context. Furthermore, as the documents are not produced for research, they may not offer all the information required. These potential limitations were considered in the document analysis but were mitigated by discussion the context in which the documents were produced and recognising that any absent information may exist elsewhere.

Taking the above into account, the final empirical chapter presents the thematic documentary analysis of the selected policy documents. The thematic aspect was utilised for the flexibility across a range of theories following Braun and Clarke (2006), and the documentary angle facilitated an understanding of the opportunities and limitations of analysis pre-existing data (Bowen, 2009).

The approach of employing the climate justice framework as an analytical tool provided an operationalisation of climate justice. It developed a more detailed level of granularity in the

framework, by having to think through what might comprise indicators for each tenet (e.g. 'recognition'). These specific indicators are illustrated in Figure 4-5.

In addition, thematic analysis yielded the possibility for direct comparison with the interview data, as it employed the same approach, and evidenced the flexibility of the theory in its application. In order not to make claims about current FG based on historical data, the policy documents were situated in their social and historical context: considering how, where, and why they were produced, as well as the ways that they go on to continue creating new meaning(s). Furthermore, and drawing on documentary analysis, this was limited to discussing the text itself and not beyond it. Since the documents were not produced as part of this research, there were some analytical gaps. A prudent future step would be to consider a broader policy analysis which may be able to comment more completely on FCERM policy in general, rather than specific documents as I have done here. The final step of the analysis was to draw together the findings of the different empirical chapters and the literature review in the Conclusion. This was approached by addressing the research questions and then reflecting on the findings and the extent to which they were impacted by methods.

4.7 Reflections on the research approach

This section provides an overview of additional reflections from undertaking this research, ranging from ideal research design, to missing voices, to the impact of researching during the covid-19 pandemic.

4.7.1. Ideal research design

Approaching this project, I had methodological ambitions to undertake a participatory action research (PAR) approach. However, due to the time and financial constraints involved in a PhD, and a lack of existing contacts with whom to collaborate, I felt that employing a PAR methodology would have only served to satisfy my desire to do it, rather than provide space for meaningful collaboration.

4.7.2. Missing voices

My understanding of flood governance in Rochdale Borough, and England, has deepened since I began this research. Resultingly, I am more aware of the wider pool of actors involved in flood governance, in particular the Fire and Rescue Services, and would like to acknowledge their absence from this research. Furthermore, I navigated participant recruitment during the early lockdowns of the pandemic, which I would argue reduced the potential participant pool to only people who were technologically savvy, or who were already in touch with my gatekeeper. The digitally excluded have higher correlations with being older, having a disability, earning less, and being more socially isolated, meaning that they are potentially a group of people whose experiences of flooding may be more

disruptive. Where relevant in the empirical discussion, I will include reflections on the limitations of my participant pool in terms of highlighting perspectives that might be missing.

4.7.3. Covid-19 pandemic

Alongside the many different manifestations of disruption to daily life, the Covid-19 pandemic was a source of significant disruption to my research project, coinciding with the point at which I had developed a research design envisaging in-person data generation methods, such as walk-along interviews. Therefore, the main impact arising from the pandemic was methodological: interviews had to be held virtually, meaning that participants were remote and static, compared to my originally intended method of walking around neighbourhoods. In response to the upending of in-person research, Lupton crowdsourced academics to contribute to a document comprising of "ways for how to turn fieldwork that was initially planned as using face-to-face methods into a more 'hands-off' mode" (Lupton, 2021, p. 1), which was invaluable for translating my research methods into a virtual composition. For example, I ensured that I was using the medium (e.g. phone or videocall) most comfortable to the participant (Archibal *et al.*, 2019).

4.8 Conclusion

This chapter began by outlining theoretical considerations of research design. First, the key arguments from the previous two chapters (on climate justice and flooding), were presented together, in order to position the research aim of operationalising a climate justice framework via a case-study in England, and research questions which will structure the research. Critical realism was presented as a meta-theory comprised of ontological realism and epistemological interpretivism, and which can serve to frame considerations of the many different experiences (constructions) of the physical reality of climate impacts of flooding in England. My positionality as a researcher informed by identities of engineering and campaigning was made explicit, as well as some of the implications that this has had for my research.

The second half of the chapter turned to practical considerations of the research project. outlining the case study approach, the selection of Rochdale Borough local authority for this research project, and approaches to participant recruitment, data generation, and data analysis. In this section, the abductive nature of my research became apparent, with the aspects of theorizing, research design, data generation and analysis, interacting and informing the development of the research project, in line with a realist approach to research (Maxwell, 2012). The last section discussed methodological reflections, including an ideal research approach, missing voices, and the main impact of the Covid-19 pandemic.

This chapter concludes the theoretical and conceptual part of the thesis. Having presented a theoretical climate justice framework and situated it in a context of flooding as climate adaptation in England, the next chapters will turn to the empirical discussion, guided by the research questions (p. 65), reiterated here.

RQ1 What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?

RQ12 What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?

To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?

RQ3 How climate-just is English flood policy?

RQ1 is addressed in chapter 5. The chapter presents empirical material relating to flooding experiences, in particular the 'moment' of the flooding and then experiences of flood governance. RQ2 is addressed in chapter 6, by responding to the empirical data presented in chapter 5 through the tenets of the climate justice framework. In places, where interview quotes are pertinent both for RQ1 and RQ2, I draw on them again in chapter 6. In these instances, they are referenced back to the page where they were first discussed. RQ3 is addressed in chapter 7, where two key policy documents are thematically analysed using the tenets of climate justice. The thesis conclusion turns to evaluating how successfully the aim of operationalising a climate justice framework was achieved.

Chapter 5 | Experiences of flooding and flood governance in Rochdale Borough

5.1 Introduction

This chapter addresses RQ1, 'What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?' and presents the empirical data relating to experiences of flooding and flood governance in Rochdale Borough. The use of a single, local authority case study was justified as the means through which to operationalise the climate justice framework for an investigation of experiences of flooding. The first section recounts the moments around the flooding as experienced by residents of Rochdale Borough. The second section presents experiences of flood governance interactions as experienced by residents of Rochdale Borough alongside the perspectives of flood governance actors. Although there is some overlap between the two sections, the difference lies in how the first is concerned with how participants experienced flooding, and involves perspectives of residents only, and the second brings in the views of flood governance actors and is concerned with how all participants experienced governance around flooding.

The sub-themes discussed in this chapter emerged from coding the interview data relating first, to the *moment(s) of flooding*, and second, to *experiences of flood governance*. The first section is organised into different 'moments' of flooding, such as the arrival of the floodwater and the clearing up and presents the range of perspectives experienced across each one. The second section is organised into different aspects of governance, ranging from the first governance interaction post-flood to moments of governance (meetings) and ongoing relationships. Prior to the fieldwork, I was anticipating the first theme of flooding experiences to emerge, as it directly related to the focus of this thesis. In contrast, the second section, experiences of flood governance, was more prominent than I had expected, suggesting that flood governance plays a significant role in how people experience flooding.

Rather than directly applying the climate justice framework, this separate, thematic display of data first provides two benefits. First, it allows the identification of additional themes which are not captured by the climate justice framework, and secondly, it aids transparency as it allows the reader to understand the interview content and my theoretical process. This chapter provides the empirical foundation for the proceeding chapter, which will investigate the extent to which the theoretical climate justice framework developed in chapter 2 reflects the kinds of concerns and needs of participants discussed below.

5.2 Experiences of flooding in Rochdale Borough

5.2.1. Introduction

As mentioned above, this section presents experiences of flooding in Rochdale Borough. Table 5-1 provides a summary of participants who were affected by flooding in Rochdale Borough and provides context for the quotes discussed below. I have included the locality of the participant so that experiences can be contrasted and compared across different floods and neighbourhoods. The flood(s) column explains which 'flood' each participant was affected by, as there are potential implications of experiencing a 'large-scale' flood event such as Boxing Day 2015 compared to being

Table 5-1 Summary of flood experiences for each participant

Pseudonym	Neighbourhood	Flood(s)	Brief description of flood(s)
Shafana	Wardleworth	Boxing Day 2015	Shafana lives in a bungalow which the water almost encroached into. She sent her kids to be looked after by family while she and her husband tried to protect belongings.
Fakhira	Wardleworth	Boxing Day 2015	Fakhira lives in a terrace and the water came into her basement. It rose halfway up and the water damaged the ground floor. She sent her kids (and sentimental possessions) to be looked after by family while she stayed at home.
Azeem	Wardleworth	Boxing Day 2015	Azeem's basement was flooded and he is an active member of the community, which was widely affected by flooding.
Kathy	Wardleworth	Boxing Day 2015, more recently	Kathy has an allotment in Wardleworth. She lives in Todmorden so is familiar with flood risk. She thinks that many allotment holders have given them up due to the flood damage.
Janet	Norden	Boxing Day 2015, Spring 2016	Janet lives in a ground floor flat which was badly damaged by the Boxing Day floods. She was (eventually) put up in alternative accommodation by her insurer. One week after moving back into her property she flooded again but was determined not to move out.
Brenda	Norden	Boxing Day 2015, several times since	Brenda lives on a top floor flat. While the inside of her home wasn't affected, she experienced disruption via the flooded car park, which continues to flood a couple of times a year.
Maureen	Turf Hill	June 2016, June 2020	The first time Maureen was flooded, she was placed in hotel accommodation by the insurance. However, she came home early to live in a caravan as it was less disruption. The flooding is surface water and sewage, and affects her and five adjacent houses. The second time she flooded, she hadn't opted for the accommodation cover so stayed at home.
Susan	Milnrow	Boxing Day 2015	Susan hasn't been flooded in her home, but she has helped neighbours informally and as part of her role as Forward Incident Officer for Rochdale Council
Shaun and Carol	Hollingworth	November 2015, March 2019, July '19	Their garage flooded, and more recently the water came 'within 2mm of the house'. They have built their own flood defences in the form of a bund around the house.
Matthew and Gail	Littleborough	Boxing Day 2015	Matthew and Gail are active members of the Littleborough Flood Action Group (LFLAG). Their home hasn't been flooded and are mainly affected by the flooding in the village. They help to coordinate respite centres in flood events.
Simon	Littleborough	Home: Isolated surface water flooding, Business: Boxing Day 2015	Simon is a member of LFLAG and has experienced flooding in his home, which is on the hills above Littleborough, and his business in Littleborough.
Evan	Littleborough	Boxing Day 2015	Evan is a member of LFLAG and although his home hasn't been flooded, he has been affected by disruption in Littleborough.
Ian	Littleborough	Boxing Day 2015	Ian's home was flooded badly on Boxing Day 2015. He and his wife were put up in a hotel in Manchester by their insurer but travelled home every day to oversee the building progress.

one out of five houses on a street who experience surface water flooding. This is not to say that floods are well-defined events but is useful terminology to refer to them; nuances of flooding and eventness will be discussed later. Participants who were affected by flooding on Boxing Day 2015 commonly referred to it as the 'Boxing Day floods', hence the use of terminology employed here.

This section examines the range of flood experiences structured according to descriptive themes arising from the analysis, ordered by the following subsections:

- *The start of the flooding;*
- *Awareness of flood risk;*
- *Personal Flood Risk Management;*
- *Flood damage and clearing up;*
- *Repairing and rebuilding;*
- *The 'new normal';*
- *Seeking explanation for flooding; and*
- *Flooding as relational.*

These themes could be understood as broadly chronological but, as the chapter will discuss later, the temporality of a flood is complex, cyclical, and non-linear. If residents discussed content relating to the subtheme, I have tried to include it. Some participants who experienced significant disruption from flooding, such as Ian and Maureen, are represented more throughout the section.

5.2.2. The start of the flooding: "I think it took everybody by surprise" (Fakhira)

This subsection provides a description of the first time that my participants experienced flooding. As evident in Table 5-1, for the majority of participants this was during the Boxing Day 2015 floods. For others, the flooding occurred in more localised events. The main similarity among participants within this subsection is the element of surprise - before they were flooded for the first time, the majority of participants were not aware of the flood risk and consequently were not expecting to be flooded. The element of surprise can wear down for some participants, although in contrast they can feel as though they are living in a state of anxiety, waiting for the next flood.

Fakhira noted how she was not expecting flooding, or the speed at which it happened. She lives near a river, but it had never posed a risk before,

> "What shocked us in 2015 was that we woke up and within two hours, the street was filled with water. I think it took everybody by surprise. Now we're more prepared for it" (Fakhira)

Ian also lives near a river but did not consider it a risk; it turned out that the flooding Ian experienced came from the road anyway,

> "I never thought about [flooding] before Boxing Day 2015 - never gave it a thought" (Ian)

On the other hand, Maureen does not live near any watercourse and she experienced flooding because of a surcharging drainage system which cannot cope with heavy rain,

> "We don't have a river or a canal or any signs of water anywhere near us. Flooding has only happened to us for the last five, six years" (Maureen)

With more than three significant events, Maureen has experienced flooding the most frequently of everyone I interviewed. Janet and Brenda, who live in the same apartment block, also experience flooding in their car park a few times a year. The first time it happened, on Boxing Day 2015, Janet's neighbour called her,

> "'I got a call from a neighbour saying 'Janet, you better get back, you're being flooded" (Janet)

And Brenda observed an increased in the water flowing onto their site from the hills around,

> "It wasn't until Boxing Day 2015 that it was absolutely horrendous. It was like a river raging down over the hillside. Nothing had previously happened with the water" (Brenda)

In contrast, Azeem, spoke about being aware of flood risk before being affected. Azeem worked for a different department at Rochdale Council but was aware of flood risk estimations.

> "[The masterplans] were saying it's potentially going to flood in these areas in about 10 years' time" (Azeem)

This will be discussed more below, but it is worth noting here that after having experienced flooding once, the 'surprise' or shock element of flooding reduced for some participants. Some felt almost the opposite, as though they are 'sitting ducks' (Fakhira) and that it is just a matter of time before they are flooded. Susan noticed this in her role as a first responder, explaining that people who have been flooded previously seemed to almost have 'acceptance' of the flooding.

> "It was interesting to see because the ones who'd been flooded before were almost complacent, 'well, we'll just do it again and then we'll wait till next time' and fed up but very accepting of it. They were not as cross as the ones who've been flooded [for the first time and] were in brand new houses. I suppose once it's your fourth or fifth time, it's just another time" (Susan)

5.2.3. Awareness of flood risk: "Every time it rains, you look out the window" (Azeem)

Some participants had a pragmatic, almost technical, approach which involved keeping an eye on weather indicators or water levels. Azeem describes how he takes note of rain,

> "Every time it rains, you look out the window. Which way is it going to go? Every time it rains, have a peek over the river and see what level the water is" (Azeem)

Matthew keeps a keen eye on the weather forecast in order to gauge the risk,

> "It depends which direction the weather's coming from. If the weather comes from the East, it tends to drop all the rain on the Calder catchment area... If the weather is coming from the west, it tends to drop all the rain on our side of the Pennines, which eventually channels itself down into the River Roch which is a floodplain area and that's where we get all the issues" (Matthew)

In contrast, Simon is concerned every time there is rain,

> "Every time it rains, you are thinking 'Is it going to happen again?' It's always been a bit of a floodplain where we are, but the levels are getting higher now" (Simon)

Other participants such as Shaun and Ian also talked about how they also keep an eye on weather and water levels, but this was accompanied by a sense of worry, seemingly triggered by noticing rain. Ian has adapted his attention to the rain by knowing to listen out for it,

> "I've lost a few nights' sleep since we last spoke, because of heavy rain. The bedroom window is always open, and when it rains it sounds worse than it actually is. I know where the mark is on the river now. So, when it gets near there, I think 'shit'… keeping an eye on the river isn't going to help - there's nowt we can do" (Ian)

Shaun talks about watching the water level, as Azeem and Simon did above,

> "It's raining, you're looking out, you're watching the river, you're thinking 'Am I going to flood at the back?' It's soul destroying" (Shaun)

Both Shaun and Ian suggest that if there is a risk of flooding, they wait and watch and feel worried. Maureen keeps a close watch on weather forecasts and sewage infrastructure around her house, describing her behaviour as almost 'obsessed',

> "you can imagine when you see the storm announcements on the telly. Straightaway, my anxiety is through the roof and I'm sitting there watching rain. It must be the most boringest thing going - watching rain - but I'm watching and thinking 'that's filling up, that's filling up' - I'm doing grid watch and everything. It's not just me, [my neighbours are] all out getting wet and thinking 'Right, is this going to be it? Is this going to be the one? … I'm obsessed with it in a way, it sounds stupid, but I am paranoid" (Maureen)

Again, there is a range of approach. Ian talked about keeping his window open to hear the rain, but he differs from Maureen in not wanting to watch the weather forecast.

> "I realized the other day [that] when the weather forecast comes on, I walk out the room. I don't want to know" (Ian)

Similarly, while on holiday he has an out of-sight-out-of-mind approach,

> "When we go on holiday - I'm not an obsessive worrier - I hope my pal don't phone me up and say they've got heavy rain, because I'll worry. I've told people not to get in touch with me, and it's five years (in a couple of months) since we were flooded" (Ian)

When Ian is away, he demonstrates that he is aware of the risk, but suggests he would rather not think about it. Janet talks about she has recently stopped feeling the need to stay at home, approximately 5 years after she was first flooded. The variation in response shows how flooding can affect people for different amounts of time,

> "Until recently [I] always felt that [I] needed to get home if there was heavy rain. It's that feeling 'I must be there" (Janet)

Participants shared flood risk knowledge among friends and neighbours, over the phone or meeting others when out checking the river levels. For example, Brenda's neighbour will check she's aware of any warnings,

> "[my neighbour] will ring me up to let me know likelihood of storms. It's always 'Oh, God, what's going to happen this time?'' (Brenda)

Fakhira' s children show their concern about flooding by asking whether she has checked the river levels, where she often meets neighbours,

> "I kept meeting my neighbours because we were all checking the river... The rest is up to God really, if it stops raining we won't get flooded, but if it carries on raining we're going to get flooded. There's nothing we can do about it" (Fakhira)

Ian notices that other residents come to his house (adjacent to the river) to assess the flood risk,

> "Only when the river's up [other people] come, we lean against the wall and [the water] comes down into the square, under the gates, through my garden, to our front door, and then we watch it go up, and up. Thank God, each time it has gone down and gone" (Ian)

In the same vein as above, Ian, Brenda and Fakhira all demonstrate that they are actively engaged with the process of responding to flood risk, but their references to God above suggest that there is an element of flood risk that they feel is out of their hands.

Participants engage with flood warnings to understand risk but have different feelings about them. For example, there can be more flood warnings and alerts than actual floods. For Kathy, the volume of formal warnings become almost pointless,

> "There's millions of amber [flood warnings] nowadays, millions of them. You can't take notice of them all the time because there are too many flood warnings. Even if there's a bit of rain, you get a flood warning. It's just stupid. You should get a flood warning that actually means you're gonna flood" (Kathy)

Evan suggests that the alerts assign some amount of responsibility for responding to the flood, suggesting that if he does not get a warning and floods later, he would not feel 'as bad'.

> "I don't mind having the alerts, there's not too many. It's what do you do when you get the alerts - if you don't get the alert, you don't feel as bad. When you do get the alert, you think "right, you're on edge now", because there's nothing you can do" (Evan)

Fakhira found that the flood alerts came too late, which is a noted challenge for rapid response catchments such as Rochdale Borough. Since Boxing Day 2105, she has begun checking the river, suggesting that she does not see flood warnings as sufficient to alert her to potential flood risk.

> "We did eventually get [a flood alert on Boxing Day 2015], but by that time I think we already knew what was happening" (Fakhira)

This subsection demonstrated that all participants hold expert knowledge, gained through lived experience, of how water moves through and around their surroundings. They draw on this information, and share it with their friends, family, and neighbours to gauge flood risk. Flood warnings and alerts were considered useful by some participants and less useful by others.

5.2.4. Personal flood risk management: "Water is strong, it's powerful" (Maureen)

This subsection introduces personal Flood Risk Management (FRM), defined here as the methods that participants employed to reduce the amount of disruption caused by flooding. Participants whose homes were not affected had fewer contributions on this topic.

In the previous sub-section, I shared how some participants stayed home in case of a flood. Upon alert of the flood, some participants, such as Janet and Shafana, travelled home to manage the water, suggesting that participants were engaged with FRM from hearing the news of flood risk. Janet's journey proved especially difficult due to combination of night-time and infrastructure disruption caused by flooding,

> "I had to use different routes to [drive] home because some of the roads were flooded and when I got there, the whole area had been plunged into darkness because the electricity failed" (Janet)

Even in daylight, as with Shafana, the public transport systems were disrupted and added a barrier to getting home.

> "The trams got cancelled, so my brother ended up picking us up and we came straight back. We couldn't get back to my house because the roads were blocked and full of water, [so] we ended up parking about half a mile away" (Shafana)

Once at home, for many participants, the first step of keeping the water at bay involved putting out sandbags. Shafana reflected that they did what they thought they should be doing, rather than knowing what to do,

> "My husband was running around trying to organize sandbags … we were putting sandbags [outside the front door] which, after, they tell us there's no point but at the time you think you're doing the right thing" (Shafana)

Since Boxing Day 2015, Fakhira has had a flood door and flood barriers fitted, and follows the instructions for how to use it,

> "I put the sandbags out front and I put them out back, I locked the front door because that is how apparently it works, the flood door. I put the barrier on the

> back, and then you're just sat there and there's nothing else to do because we've taken all the precautions now" (Fakhira)

Unlike Fakhira and Shafana, Maureen found putting out sandbags a more challenging task due to the combination of health conditions and Maureen not wanting to bother anyone by asking for help,

> "My partner is disabled, he can't lift anything because of his back, and I'm 51 and I'm having to get sandbags out and things like that. The kids always say 'Mum - ring us', but I don't want to bother them. I'll just get on with it and do it" (Maureen)

Maureen's neighbours experience highlights how some physical tasks for FRM can not only be difficult for residents at risk of flooding, but can also pose health risks,

> "[My neighbour is] 81 years old and he nearly died two years ago when [flooding] happened, he was lifting sandbags and he nearly had a heart attack. The fire brigade had to stop what they were doing to get him an ambulance" (Maureen)

Shafana described a situation where she wanted to help her neighbour with managing the floodwater, as they have limited vision, but the flooding happened too quickly,

> "I was panicked beyond belief and my husband was running around … and the kids were in the house wondering what the hell's going on. It was quite traumatic to be honest…My neighbour flooded…but because I was too busy concentrating on [my house], you don't have the time to help other people" (Shafana)

After the sandbags were out, participants also took measures to move their belongings to safer locations. Often this was upstairs, or to other houses. For example, Fakhira sent her precious belongings to a family member,

> "I'm removing my photo album from the bedroom and sending them to my mum's house… The kids were saying 'Mum, at what point do we start moving the PlayStation?'" (Fakhira)

Shafana highlighted how living in a bungalow posed extra challenges for this,

> "We've not got another floor to take everything up to, so we were sat there thinking, 'Where can I move this furniture to?' Everything's getting piled on top

> the sofa because I didn't know what else to do, the TV and everything. I've got nowhere to put anything" (Shafana)

Some prized belongings are larger than albums and furniture; Maureen recounted how her friends or neighbours ('everyone') were helping her to ground her catering trailer and stop it floating away. She explained elsewhere how the trailer was her main source of income, thus the trailer was not only an important possession to save but also her source of income,

> "I've got a catering trailer on the drive. It hasn't moved this year because of Covid… In June [2020], it was near on floating away, we had to push it onto the main road. It's small, but we still had to push onto the main road. Everyone was laughing saying 'Come on, let's get this catering trailer out of here otherwise, it is going to be floating around the garden' - water is strong, it's powerful" (Maureen)

In contrast, Shaun and his wife recounted how were up managing flooding in the middle of the night,

> "[water] broke the flood wall, we were thinking 'What else can we do?' In March, we got up at three in the morning… the water had to get over about eight inches of tree roots to get out, so we dug the trees out and allowed it to get out, which kept us to about one or two millimetres from the water getting into the house" (Shaun)

Shaun and his wife had already installed a bund to act as a flood wall after they were flooded the first time, demonstrating a longer-term preventative approach FRM. It is worth highlighting that groundworks are expensive and require space, so this is not an option for many people. Property level protection (PLP) can be more space-saving, as with Fakhira's door and barrier above, but it also generally is paid for by individual homeowners. After particularly disruptive floods, which reveal an area to be at significant and ongoing flood risk, there can be some grants which provide doors for the houses most at risk.

Regardless of the number of potential floods participants had responded to, after undertaking what FRM they could, many participants described a feeling of resignation when they talked about watching and waiting for the water. Ian described the complexity of broader FRM in the area,

> "There's nothing we can do, what are we gonna do? Just stand here like King Herod and try and force the water back? Build a moat around our house, or build walls around our house? Then the water'll go to someone else's won't it?" (Ian)

Azeem also recounted the collective experience of flooding, specifically how the fire service had not been able to pump water while the catchment was inundated in the Boxing Day floods,

> "it's not just a certain area, [there was flooding] all over the borough… like the fire service said to us 'Until it stops raining, how are we going to pump [it] away?' Which is true. If it's absolutely hammering it, and there's God knows how many litres of water coming down, you can pump as much as you want - it isn't going to make a difference" (Azeem)

This subsection has demonstrated how participants whose homes were flooded undertook both long- and short-term personal flood risk management (FRM) measures to reduce the likelihood of water entering their homes, and the damage it may cause if it did so. Participants returned home if they were out to undertake a range of FRM measures, such as putting out sandbags and moving possessions, before waiting for the water to reside from their homes and neighbourhoods. Despite varying abilities to undertake FRM, participants persisted, and although not all of them were able to help neighbours or others, there was a sense of concern for those around them.

5.2.5. Flood damage and clearing up: "When we flood, it's not just sewage, it's everything that we're left with" (Shafana)

Despite personal FRM efforts, several participants still experienced flooding disruption and damage. This subsection explores the (material) damage caused by floodwater, highlighting aspects of the clear up such as what floodwater can carry, where it impacts, and how long the damage lingers.

Brenda highlighted how the floodwater does not have to be around for long to cause damage,

> "Flash flooding happens so quickly that you think, 'what was it all about, really?' It's really a strange situation… It finishes, and an hour later you wouldn't believe it had happened other than the debris that it leaves behind" (Brenda)

In other cases, when the water stays around for longer, it can require pumping out. Maureen explains what was left behind after the water was pumped away, and shared a similar sense of 'what happened' to Brenda above,

> "Within two hours, the fire brigade has pumped all the water out and you're just left with all this black sewerage all through your house. The sun comes back out, and you think 'What's just happened?' It's horrendous, it really is. It's awful" (Maureen)

Both Brenda and Maureen describe a sense of shock after the panic of the flood. Some participants took longer for their homes to be cleared; Ian's home was flooded from river water that

broke the banks upstream and travelled along the road into, and through, his home. He explains how he came downstairs on Boxing Day morning to discover that his house had flooded overnight,

> "I came down with jeans and a T shirt on, it was frigging minus something. As I'm walking - it was dark - I presumed I was in water, I was in poo. The house was covered in it" (Ian)

In addition to mess, exposure to raw sewage can pose a health concern. Susan was responding to a flood during the Covid-19 pandemic in her first responder role, and explained how she had to balance the risk of health and safety between sewage exposure and catching Covid-19,

> "I had eight properties that had sewage inside them … there [were] children and people who've got poor health in those properties. Coronavirus [was also a problem], so I don't want to move them out" (Susan)

Where there has been sewage, deep cleans are required. Maureen talked about how long it takes to get rid of the sewage smell, even once the floodwater has been cleaned up,

> "After you've had this flood, you put your washing machine on and your clothes stink of sewage, it just stinks. You've got to put bleach and all sorts in the washing machine for a good three or four times before you get rid of that smell" (Maureen)

In the case of Ian's prized cars, a hobby that he had enjoyed for years, the insurance insisted that the car could not be sufficiently cleaned from the sewage, and that he had to give it up,

> "My car's [Insurer] said to clean the TVR (car) was £42,000. I nearly fainted, I was told it has to be surgically cleaned; taken apart, the engine stripped, polished and put back. I thought 'I can do that' because I built the engine, I built the bloody car … [but because it] could be infected with the poo and everything else, [they said] I could sue the insurance company years later [so] instead everything has to be scrapped…People make money out of your misery. It's horrible. I was upset about the cars… I wasn't sad about the house, it was an inconvenience" (Ian)

In addition to losing cars, the ongoing flood risk means that car insurers will not insure Ian for any cars now, thus he can no longer pursue his hobby. Relatedly to hobbies, Shaun, who runs a local Boxing Gym, wanted to ensure it opened swiftly after the flooding in order for others to enjoy their

leisure activities. Shaun described feeling slightly at odds that elements of the flood clear up was a quick and positive experience that brought people together,

> "When the gym flooded in 2015 - within a day we'd cleaned the gym out, everybody come round and helped us clean everything out. It felt good actually, though for the wrong reasons… I think it brought a small part community closer together and working together" (Evan)

Ian was helped by local volunteers to clear some of the flood damage. However, his experience was less positive that Evan's, as he felt that he would make different decisions if it happened again,

> "If I could have that time again, I made a lot of mistakes about things that needn't have been thrown out. My father took films of us from when we were born to when I left home at 16, and now all those have gone; I didn't realize. I've written magazine articles and had the copies before they were printed, I threw all those away… Films of me with the model airplanes flying all over England, I threw them out and there was no need"' (Ian)

Shaun also lost sentimental possessions, and describes how the water damage lingered for a long time after, in the form of damp and mould,

> "There's mould everywhere. We tried fighting it, but it's all over the ceiling [in the garage] … 25 years of National Geographics are covered in mould, photographs are covered in mould, clothes are covered in mould" (Shaun)

For several participants the floodwater left traces externally as well as internally. For Ian, this was in the form of carrying Christmas rubbish and killing his fish,

> "It weren't the end of the world, but our back garden was full of about 10 ton of leaves, turkey bones, empty beer tins, whiskey bottles, crepe paper from wrapping … [our] fish had all come out of the pond, swam around the garden, the water had gone, and they died' (Ian)

Maureen noticed an increase in rats which she linked to the increase in flooding,

> "[flooding] brings rats as well, I've never seen rats before in the back garden, but after heavy rain all of a sudden now I'm seeing a lot of rats" (Maureen)

Shafana talked about how the flooding brought Japanese Knotweed, which she had not known about before the flood. She also was not sure if her neighbours were aware of it, and talked about needing someone to help clear the flooding debris,

> "The water came into the garden, well, a mixture of rainwater and all the bad stuff that came with it… Japanese knotweed was carried in the water too. When we flood, it's not just sewage, it's everything that we're left with. That's when we need support, because we need someone to help us" (Shafana)

At allotment sites, such as where Kathy has her charity, immersion under floodwater can render soil too damaged for growing through exposure to toxins. It is expensive (and uninsurable) and takes time and care to recover plants and repair the soil, which Kathy attests to the reduction in active plots at her site,

> "It used to be a thriving allotment area, but there is hardly anybody left on it now because it floods so regularly. These poor people who are just doing it on their own basis, they plant the plants, or they dig it over, and it all gets washed away, including everything that they own" (Kathy)

This subsection has presented perspectives on the recession of the floodwater, leftover debris, and immediate clearing up requirements. It demonstrated that the damage caused by flooding has a wider reach that the path the floodwater took and can last for a long time after the water has gone. This is partly due to what is carried in the water, whether it is rubbish, sewage, invasive species, or a combination. Submerged belongings can be rendered unsalvageable by insurance companies who want to protect themselves from legal risks to the detriment of some participants. In some cases, clearing up brought people together, whereas in other cases, repeated flooding may have led to longer term disruption to community spaces, such as the now unoccupied allotments.

5.2.6. Repairing and rebuilding: "There was more damage than we thought" (Janet)

Building on the discussion of the immediate clear-up from the previous subsection, this subsection considers longer-term impacts of the flood and efforts made to adapt to a 'new normal' of living with flood risk. It highlights the range of emotional, financial, and social disruption felt as a result of living in temporary accommodation, and consequent impacts on house value.

In cases where there was substantial damage internally, and where participants had insurance to cover it, participants were given temporary accommodation. Ian recounted how he and his wife were offered accommodation in Hebden Bridge, a nearby town which had also flooded. Despite this, he recalled how the rental prices increased due to the demand,

> "The [insurance company tried to send] us to Hebden Bridge. Hebden Bridge was flooded worse than Littleborough, it looked like a bomb had gone off there; the whole town was flooded. There's another thing, there was a queue outside all the estate agents .... The prices went up from £300 to £750 a month, for a two-up-two-down" (Ian)

Janet was also offered different options for temporary accommodation, before there was an option which suited her need to be near her flat to oversee the building work,

> "It took a while to get [accommodation], first of all, a hotel that was within a few miles, which worked very well, and then eventually a local B&B" (Janet)

Maureen and her family were also placed in a hotel which was initially enjoyable. However, it soon became a source of stress, as it was expensive to pay upfront for food. In addition, the insurance company did not book their rooms far in advance, which resulted in them having to move around constantly,

> "The first two weeks it felt like a holiday, you had the spa, you had all that. You couldn't cook so it was takeaways, takeaways, takeaways… You had to keep your receipts and the insurance would pay you back - but to pay £13 for a fish finger butty in the hotel, you just couldn't afford it… [also] we had to keep ringing the insurance up because the [hotel manager] used to come to us and say 'The [insurers have] only paid till Friday but we're booked up then for three days'… you didn't know where you were. We ended up in a Premier Inn in Huddersfield because we had to move out of [the hotel]" (Maureen)

Maureen also explained how she could not take her dogs to the hotel with her, resulting in extra work to look after them from afar,

> "[the dogs] had to go to my daughters', who has got two dogs herself... You can imagine: three British Bulldogs and two little pugs, it was quite crowded really. She said 'Mum, it will work, we'll manage, we'll sort it'. Every day I went round and took the dogs out, but I just felt like I was depending on people, putting out on people" (Maureen)

After a few weeks of disruption, Maureen convinced the insurance company to let her move back home and manage the building repairs from there,

> "We ended up getting our own builders in and they turned it around within six weeks, but we ended having to buy a caravan and putting on the drive. We all ended up living there: the kids moved back in upstairs as the builders were downstairs, and we moved into a caravan on the drive until it got done because I have asthma and COPD, so the smell and the damp [from the house] got in my chest" (Maureen)

Ian and his partner stayed in the hotel they had been assigned, but commuted from Manchester to Littleborough every day to oversee the repair process,

> "I used to leave Manchester at half past 6 in the morning and come home. There were five builders here, great lads - I used to get their breakfast. The insurance paid out for the sheds we lost, so I used to come into Fiona's shed (there was no heating then) and we used to sit here for a few hours, go for a walk in the country in the snow, we're both over 60" (Ian)

Ian and Fiona were retired when they flooded in 2015, which may have made the disruption more manageable. Janet also managed her repairs from the hotel, but her experience highlights the blurriness between the 'after' and 'before' of flooding, as she flooded within a week of moving back in,

> "The whole process took five months … I got the wonderful date of when I could move in, in the May. I'd kept saying, 'are you sure this is all right?'. 'Yes, absolutely sure'. Within six days, I was flooded again. It wasn't as bad as before, it was just all the carpets again, but I was determined not to move out this time. I was three weeks with dryers and noise, while they got everything sorted. It was quite a challenging experience" (Janet)

A similar story was presented by Susan, a first responder for Rochdale Council, when she helped a shop owner in Milnrow who is frequently flooded,

> "People are clearing up for months, sometimes years, afterwards. [One business owner in Milnrow will] clean up, and then he looks at the weather and it's going to rain again, so what did he bother?" (Susan)

Even in situations where the floodwater had not entered far internally, it still caused damage through creeping into floors and furniture which had not been submerged. Fakhira had basement flooding, but had to replace her ground flood,

> "My floor ended up getting damaged and we think it was because of the humidity of the water. It happened to a couple of our neighbours as well. We had to have that fixed pretty quickly because I have two kids" (Fakhira)

Janet lives in a ground floor apartment and much of her wooden furniture was affected,

> "The water wasn't that deep in the apartment, but it started getting into the door jambs, the soffits, the skirting boards, and then seeping up into the furniture. There was more damage than we thought because of that, and all the woodwork had to be removed" (Janet)

Participants' experiences of temporary accommodation and repairs demonstrates that even accommodation which initially 'felt like a holiday' (Maureen) soon became tiresome and expensive, and that participants were eager to move back home as soon as possible. Tasks such as expensing claims, and liaising with builders generated extra work, in addition to paid and familiar work, which had to be done from afar.

5.2.7. The 'new normal': "The flood is really the start and then it gets worse… It goes on forever" (Ian)

This subsection explores how, after FRM, clearing up, repairing, and rebuilding, participants' perspectives on flood risk had shifted, affecting their day-to-day life in a way it did not before.

For some participants, the repeat nature of flooding and almost constant awareness of flood risk has become a normal part of their lives. Ian explained how for him, the impacts of flooding 'goes on forever' – he did not feel that it was 'over' at the time of the interview in October 2020,

> "The flood is really the start and then it gets worse… It goes on forever Juliet. It's not just December the 26th 2015, the problems are still going on now" (Ian)

Azeem explained that he thinks flood risk anxiety has become a long-term concern, regardless of infrastructure,

> "[My friends and family] don't want to live in anxiety looking out at the river. But unfortunately, I think we're gonna have to live with that anxiety. Even the infrastructure, I personally don't think it will stop the flooding" (Azeem)

This description of anxiety challenges common Defra's conceptualisations of flooding as an event which has a 'before' and 'after'. Instead, the accounts here suggest flood risk as a constant state of potentiality which sometimes results in flood events.

As mentioned above, Shaun and Carol adapted to their state of flood risk by building their own flood defence solution in their garden. Despite this, they also experienced emotional strain,

> "The emotional strain beats the financial costs hands down. [The flooding] has cost us probably £40-50,000 for the damage and the work that we've done. That's nothing in comparison with the emotional impact" (Shaun)

Brenda reflected on the impact of flooding on her neighbours, highlighting how it is the emotional attachment to home, in addition to material value of house, which is particularly vulnerable,

> "I can't think of anything else - other than fire, perhaps - that is worse than having your house flooded. Your home flooded, not just your house, but your home, flooded" (Brenda)

Other factors can compound flood risk; these interviews were undertaken in summer 2020, a few months after the Covid-19 outbreak and national lockdown. Discourses about the 'new normal' arose from the pandemic, and Ian explained how he was particularly aware of how the intersection of flood risk and the pandemic would be particularly complex,

> "There's worse things that are happening now than the flood. Can you imagine if we get flooded tomorrow, are we going to go to a hotel in Manchester, with this COVID? It's shit" (Ian)

While some participants described a new and heightened awareness of flood risk, some participants explained how their feelings and memories of the flooding had changed over time. Fakhira recalls the flooding differently from at the time,

> "It makes me laugh now, but at the time I was in such a panic" (Fakhira)

Maureen explained how she had to manage not feeling depressed about the flooding,

> "You have to laugh about [the flooding] sometimes, because otherwise you end up getting so depressed" (Maureen)

In contrast, Ian talked about how the flooding affected him more after the flooding event than at the time,

> "It doesn't affect you right away, the flood. It's afterward" (Ian)

Janet explained how talking about the flood helped her to process it,

> "It's quite cathartic in a sense, talking about things that have happened. So, you're giving a lot of people cathartic experiences" (Janet)

The only common point among these accounts of participants' feelings about flooding is that their feelings have changed over time, some have improved but some have worsened. This subsection presented how worry is a common long-term result of flooding among my participants. It demonstrated how, for many participants, the worry of flooding did not recede with the water, although some participants found recounting memories of flooding less distressing at the interviews than at the time of flooding. For Janet, the opportunity to talk about her experience helped to process it.

5.2.8. Identifying causes of flooding: "Water just gets everywhere" (Brenda)

Expanding on participants' concern about flood risk, this subsection focuses on how participants seek explanations for the cause of flooding. This subsection highlights how it might not (only) be the water, but additionally the expectations of being supported which makes flooding so distressing. Participants who experienced the flood on Boxing Day 2015 provided a range of suggestions for what caused the flooding: climate, infrastructure, and governance. As discussed in chapter 3, causes of flooding are multiple and complex, so the focus here is to investigate how participants make sense of possible causes of flooding, and where they obtain information to reach such conclusions.

Earlier in the section, I presented how participants use an awareness of rain as an indicator of flood risk. Some participants associate their flood experiences with heavy rain, seeing weather as they main culprit. Evan explains how he understand the volume of rain to be increasing, although it affects different places each time,

> "The water is coming down heavier as well. It's when it becomes rushing, due to heavy water for short periods of time - 20 minutes or half an hour - that's when the problem starts… On each and every flooding incident, water will come from places that it's never come from before, so it seems to be shifting sands" (Evan)

Susan reached the same conclusion from experiences for her role as first responder,

> "Heavy rain impact seems to affect some areas, and flash storms, where it's really heavy rain but for a short time, seem to affect other places, and then some places are affected by both. There's somewhere new each time, it's really weird. Water just gets everywhere" (Susan)

Although Evan and Susan highlight that the flooding affects different areas each time, other participants experience patterns of flooding, in Maureen's case relating to her own home,

> "[flooding] always happens in June… It happened this year at the same time in June as it did four years ago" (Maureen)

Some participants explained that they perceive flooding to have become considerably more frequent over time, which reflects weather records (Kendon *et al.*, 2022). Brenda talked about how the flooding has only become apparent in the past 5-6 years,

> "The people who built the apartments and houses on the little estate where I live spent a lot of money trying to resolve [the flood risk]. I'm talking about hundreds of thousands of pounds. Nobody ever has come up with an answer as to why this keeps happening. Even after the amount of man hours and money that they spent, it still kept happening. It always [floods] when there was very, very heavy rainfall. I always thought it was really strange. Why had it never happened before? I've lived here five, six years" (Brenda)

Kathy has noticed over the past 12 years how the flooding at the allotments has increased in frequency and volume, which she attributes to climate change,

> "Our charity has had the plot for 12 years. Absolutely, hugely it floods more than it used to. When we first started, in July, we flooded. Then we didn't flood again for probably about five or six years, and then it always flooded in winter - but not a huge amount. When it first started to flood, it was a big thing 'because we've got two foot of flood water'. Now that's nothing. Now it's 10, 15 foot. It's hugely different. Climate change has made a massive difference" (Kathy)

Azeem also highlighted global warming as a cause for exceeding the estimations,

> "The flood risk masterplans were for the next 15, 20 years. They were saying it's potentially going to flood in these areas in about 10 years' time, you get me? But obviously because of global warming and stuff, and all the rest of it, it's all changed around" (Azeem).

Moving on, infrastructure was highlighted as a cause of flooding in some areas. Maureen explained how she witnessed how the drainage system had insufficient capacity to channel the heavy rain,

> "The rain is just coming down too fast for the drains to handle and before you know it, it's coming up through the manholes, it's coming up through the drains in our property. It's coming up through the sinks, it's going into the washing machine, and then it's coming through the house like a river" (Maureen)

Shafana noticed that the drains around her were blocked, and the river level was too high, also leading to the surface water not draining away.

> "The [drainage systems] must have been blocked because the water had nowhere to go. The surface water was mixing with what was coming up from the river and it was just getting higher and higher in the street" (Shafana)

Brenda observed a similar challenge to Shafana, that the local brook was too full to take on runoff,

> "The only problem with [the brook] is that the drains that come off the hillside and from the culverts, they obviously go underneath the carpark and then they come out into the brook. If that brook is filled up to the top with water, then the water from the hillside can't really get into the brook. If [the water level] is below the drainage then no problem, it just trickles out" (Brenda)

Shaun investigated old Victorian drainage infrastructure around his house, concluding that a culvert was blocked due to a root incursion which reduced the rate that runoff could drain away,

> "When there was an increase in rainfall, the flow [from the culvert] should increase greatly, but you could see it flowing into the river at a similar rate. When the river subsides and the water is still filling up behind us, you look at where it enters the river and the water's thumping out through that culvert" (Shaun)

Kathy runs an allotment in Rochdale Borough and lives in Todmorden. She draws links between the state of infrastructure between the two towns,

> "In Rochdale, the flood defences are much poorer, [so the flooding] was a lot worse [than Todmorden]" (Kathy)

In addition to understanding water flow in their immediate area, participants explained flooding related to the wider catchment. Azeem noted how flooding spread down the valley on Boxing Day 2015,

> "[The Boxing Day floods] started off in Littleborough, that's where the river flows all the way down to the town centre" (Azeem)

Participants were also concerned about the impacts of urbanisation and development, not only on their own homes but also for potential future residents. Ian highlights how impermeable paving by a residential development next door has resulted in more runoff,

> "When they did the new builds in front of us it was soil and gravel and the water never stayed in the lower points. Now the water has got nowhere to go; it's concreted and tarmacked. Before, [there was] never any water in my drive, but when they build new properties, they build new roads. There's nowhere for the bloody water to go is there?" (Ian)

Shafana lives opposite a new development site being constructed on brownfield land. She explained how she was concerned about the resulting impacts on the drainage system,

> "they're building on flood land. I'm sorry, but they are going to flood. All we keep getting every time we bring it up is "well, we're building them higher up" Well that's lovely for them, but what about all the extra pressure on the drainage? They're high up, but we aren't, so what if the water is coming right in our houses?" (Shafana)

Participants' offering explanations for causes of flooding implicitly demonstrates how they seek to reduce their flood risk, likely due to anxieties and feelings of being trapped arising from the 'new normal'. This subsection demonstrated how participants hold complex understandings of water flow through their locality, highlighting the many possible reasons that it floods. These understandings result primarily from observation, information seeking, and shared experiences. Participants demonstrate an intimate knowledge of how their home and locality (repeatedly) respond to flooding. These two types of knowledge combined provide a rich picture of flood risk in Rochdale Borough.

5.2.9. Flooding as collective and relational: "I know that many people had far worse experiences" (Janet)

The final subsection highlights how participants were aware of how their experiences of flooding related or overlapped to others'. Janet began recounting her experience of flooding in the interview,

> "I know that many people - at the time when I was flooded - had far worse experiences" (Janet)

Janet's awareness of the wide-ranging impacts of flooding situates her among (abstract) others and demonstrate a concern for those with 'worse experiences'. Maureen was aware the experiences of those proximate to her,

> "she's bedbound, the lady next door, she lives in the front room. They've got mushrooms growing all round their skirting boards, they have to cut them down. Honest to God. The water goes under the property, they've already had a new floor put in, but they've got mushrooms growing and their house stinks of mould" (Maureen)

While Ian did not have neighbours who were flooded, he demonstrated concern for the abstract people affected north in Carlisle, and suggested that he would feel sympathy for anyone he heard had been flooded,

> "I thought flooding wouldn't bother me and then we were flooded. Carlisle was it [that flooded]? I used to watch it on the news and think 'Poor souls', but never give it another thought… I do now" (Ian)

Participants also hypothesised at a neighbourhood scale about how other areas were coping. Despite Wardleworth, Milnrow, and Littleborough being three areas that I interviewed participants from, all participants told me that flood risk investment was being directed somewhere not where they lived. For example, Fakhira explains that, despite Wardleworth being more 'deprived', Littleborough probably deserved investment as many houses were internally flooded,

> "Wardleworth is a deprived area, but the town centre had water come inside, and Littleborough had it come inside. Obviously, if you're standing back and seeing it from an outsider's point of view, they - [Littleborough] - have got to be the priority… we - [Wardleworth] - were the least worst hit, nobody could have cared less" (Fakhira)

In contrast, Simon from Littleborough flood group considered Littleborough to be 'forgotten', hypothesising that the flood group were good at self-organising and thus did not need support,

> "I do think sometimes that's why we're forgotten about. We do a lot ourselves and we get on with it, we're proactive... I think that's why the investment isn't the same up here [in Littleborough] as it is in other parts of the town, because we do our own thing" (Simon)

Over in Milnrow, in conversation with Susan, a business owner was comparing his experiences of flooding to Littleborough and thought the parallel flood experience(s) and level of deprivation should result in similar investment,

> "The guy in Milnrow was saying 'Littleborough has had all this investment thrown at it to sort the flooding out following Boxing Day. Yet, I've been flooded this many times. I can't see any money being spent in Milnrow whatsoever and that's not fair'. [Neither] area is deprived, [they are] very similar" (Susan)

The quotes demonstrate how participants understand that FRM is based on finite resources which are allocated. Moreover, participants employ different distributive theories (e,g. who is most in need, who was worst affected) for explaining how investments are allocated. These kinds of decisions are at the heart of climate justice concerns, although climate justice posits that these should be collectively agreed upon.

Shafana also draws a similar comparison between the North-West and London, explaining how London attracts more funding and investment,

> "Other people and other places seem to be getting priority. I think we need to not be ignored. I mean, I know we're the Northwest, we don't seem to get a look in as much as London, for example, which always gets everything going" (Shafana)

Shafana suggests that she thinks public services in the north(west) more generally are less resourced that their southern counterparts. These reflections highlight an example of the manifestations of power structures that climate justice seeks to rebalance.

This subsection expands on the accounts above, where participants such as Shaun highlight a concern for future people who might live in his house, to demonstrate how participants understand their own flood experiences in relation to others'. The relational aspect ranges from local to abstract, and from solidarity to competition.

5.2.10. Section summary

This section has presented the flood experiences of some Rochdale Borough residents, ranging from the beginning of the flooding to clearing up, the 'new normal', and understanding causes of flooding and other experiences.

The accounts above suggest that residents are self-sufficient, creative, and sympathetic in managing their own flood risk. It was evident that participants employ their experiences of flooding and understanding of their locality to iterate hypotheses of how and why flooding happens, whether

there are patterns across the catchment, overall demonstrating a valuable experiential knowledge base. In addition, accounts of flooding were underpinned by an awareness of how others are impacted by flooding, whether they were neighbours, abstract people on the news, or in other parts of the country. These accounts positioned residents as affected by flooding in different ways, but with an awareness of being situated within a wider collective.

Experiences of flooding were affected by personal circumstances, such as assets, physical ability, and financial situation. Access to personal vehicles was a benefit of being able to return home upon news of flooding, as some public transport networks were cancelled. The section demonstrated how the undertaking personal FRM can involve physical labour, such as moving sandbags around. Furthermore, in general, participants with capital (and space) had more access to installing PLP, such as bunds. Flood doors are available to buy, but in some cases, there have been schemes to install these by the local authority. These factors demonstrate how some participants can experience more disruption than others due to a lack of concern for how the physical element of flooding interacts with personal circumstance.

The section highlighted how participants have found themselves in a state of flood risk, the 'new normal', whereby they live with (often constant) anxiety about potential flooding, although there were instances where community spirits were high. The anxiety can affect residents' daily life, requiring medication or limiting residents from feeling as though they can leave the house. Flooding can lead to (repeated) displacement from their homes or businesses, and thus social networks and comforts. In the long term, flooding can involve a struggle to obtain or afford home insurance, and result in homes that are more difficult to sell and at a significant loss of value. Despite this, participants were also conscious of passing on the stress of flood risk to future potential residents.

This subsection concludes the presentation of experiences of flooding and will now turn to experiences of flood governance of all participants. The topic of people's experiences of flooding will be returned to in the next chapter, where I will interrogate these empirical accounts alongside the theoretical climate justice framework.

5.3 Experiences of flood governance

5.3.1. Introduction

This section presents empirical data relating to flood governance interactions. This theme was emergent from the empirical data, where it became apparent that a significant aspect of experiencing flooding relates to interacting with others – whether friends, family, neighbours, authorities or volunteers. This section focuses particularly on *interactions between residents and flood governance actors*, as well as *among the different flood governance actors*. This was partly shaped by my interview

questions, as I asked about flood experiences, but I was not expecting there to be so much data relating to governance.

This subsection is concerned with the immediate moments after flooding happens and focuses on the interactions between residents and flood governance actors, and sometimes among each group. This section is not focused on what *should have* happened according to the FRM policy, (flood governance policy is discussed elsewhere) but rather how residents understood their experiences and how they felt. Drawing again on the climate justice framework presented in chapter 2, residents' experiences are central because they are currently under included and can provide valuable insights into both their experiences of flooding. An overview of the residents I interviewed was summarised in Table 5-1, and a summary of the flood governance actors and their roles is provided in Table 5.2. The following sub-sections includes their perspectives in addition to the residents'.

Table 5-2 Summary of flood governance actors and their respective roles

Pseudonym	Role title	Role description
Susan	Forward Incident Officer, Rochdale Borough Council	Acts as a first responder for the council. When on call, she is acts as "the eyes on the ground for senior managers, if there's an emergency that the council have to deal with. This has repeatedly and increasingly included flooding in the last 12 months to two years".
Laura	Community Flood Resilience Project Officer, National Flood Forum	Laura works for the National Flood Forum, which represents and supports flood risk communities. She identifies as "a bit of a Jack of all trades… trying to bridge a bit of a gap that there is sometimes between the community and the flood risk authorities"
Fred	Drainage Engineer, Rochdale Borough Council	Fred is the drainage engineer for the council. His "principal role is [assessing] planning applications that come in for housing and commercial development… to oversee that new developments won't make flooding problems worse for other people, and for the people who live and work in the development when it's been built"
Hilary	No title given, Greater Manchester Combined Authority	Hilary's role involves providing "a link between the regional food and coastal committee (RFCC) and districts - mainly Lead Local Flood Authorities (LLFA"
Gordon	Lead, Lead Local Flood Authority, Rochdale Borough Council	Gordon's role "involves 'three hats' – spatial planning, as strategic lead for the Lead Local Flood Authority (LLFA), and in partnership with the National Flood Forum"
Danny	Flood risk partnership manager, United Utilities	Danny's role " includes improving work with partners, by promoting multiple benefits and identifying sharable data for developing a high resolution picture of flood risk in the region"
Trevor	Drainage strategy and planning manager, United Utilities	Trevor's role " includes striving to reduce the impact of surface water on the network and working with partners to promote alternative drainage strategies different to channeling runoff directly to combined sewers"
James	Senior advisor, Environment Agency	James works in a technical role in the partnership and strategic overview team, which is in the flood and coastal risk management department within the Environment Agency. The area that his work "covers is Greater Manchester, of which Rochdale is one of the 10 boroughs"

The first three sub-sections are ordered chronologically, in a hypothetical order that might be experienced after a flood: starting with *Immediate responses to flooding*, then *Accessing support after flooding*, and finally *Formal Meetings*. The latter subsections span the overall experience of flooding, providing an overview of challenges with private flood governance in Insuring against future flood risk, longer term engagement with flood governance in *Ongoing Interactions*, the importance felt by residents for *Sympathy for impacts of flooding,* and finally investigating elements of *Fault, Blame, and Responsibility*.

5.3.2. Immediate governance responses to flooding: "they just asked us a few questions, and then you never saw them again" (Fakhira)

Participants had varied feelings towards interactions immediately after a flood event. The stories presented by residents often had elements of negativity, such as not feeling that they were being informed, taken seriously, or considered by the relevant authorities. Participants mentioned specific aspects of flood governance, such as the response from the fire service, and the overall process, such the clear up in one area.

Ian said that he did not see anyone from the Risk Management Authorities (RMA's),

> "Never saw anyone. No, nothing. I've not heard anything about any work they might be doing. You could blame me because we don't buy the Rochdale paper, but there's no good news at the moment so I'd rather not know" (Ian)

Similarly, Fakhira felt that although she saw some people from the council and receiving some money towards the cost of flooding, Fakhira did not recall Rochdale Borough Council (RBC) offering useful support after the Boxing Day floods,

> "We got people [from the council] knocking on doors after that, but nobody actually did anything - they just asked us a few questions, and then you never saw them again. They gave us some money - I think we got 500 pounds" (Fakhira)

Fakhira suggested that the lack of ongoing interaction with RBC was disappointing, and that she expected them to reach out more than she experienced. Brenda felt that when she and her neighbours from her apartment block alerted the neighbours, they had to convince the management group to be taken seriously,

> "The way that the management group treated it at first was as if practically nothing had happened. No one came out to investigate" (Brenda)

Brenda was able to interact with the management group but did not feel that they were aware of the extent of the issue. Other residents had mixed experiences across different authorities. For example, Maureen felt positively about the emergency services,

> "… the fire brigade - I mean they're brilliant, absolutely brilliant, I can't praise them enough" (Maureen)

In contrast, she felt that the water company and RBC held responsibility for flooding that they were not acting on,

> "Every time [it floods] we have to tell the Water Board, or they come out, whichever way. They think they're doing really well… they'll send you £300, but what actually is it going to do? In all honesty, it feels like it's an insult. If they're sending us that, is that not a way to say 'Well, yeah it is our fault'? Rochdale [Borough] Council don't send us anything" (Maureen)

Maureen demonstrates here how her relationship with different authorities varies across authorities, and subsequently influence interactions. The above quotes suggest that Maureen's feelings about the authorities relate to whether she thinks they are fulfilling their roles or not. Maureen explains elsewhere that her frustration with the water company and RBC stem from feeling that they could be doing more to reduce flood risk but are not.

Azeem, who had experience working with RBC albeit not in a flood governance context, indicated that he had a positive experience with all authorities, during his involvement in the immediate to mid-term flood risk response,

> "I think, overall, everybody came together and supported everybody in it. That's the main thing: it was the community, Council, third party agencies. Everybody. We got the job done. Like I said at the start, that was a lot easier than this Covid stuff. It was done, dusted and out of the way. [Covid] is crazy" (Azeem)

Azeem highlights the collaborative effort and indicates that the partnership working went on for a couple of weeks, which contrasts with the examples above where residents talk about moments of interaction.

This subsection demonstrates how most residents did not feel that RMAs had taken them seriously, listened to them, or even turned up. In contrast, Azeem felt that everyone worked well together.

5.3.3. Accessing support after flooding: "We contacted various departments and were passed around" (Brenda)

Building on the previous subsection, especially that some participants felt that flood governance authorities were absent, this subsection summarises the efforts made by residents to get in touch with relevant authorities or groups after a flood. This subsection reflects the challenges that residents found when contacting the authorities, ranging from being 'passed around' to struggling to find the authority responsible. Many participants discuss the value of good interpersonal relationships.

The members of Littleborough Flood Group were approached by a council officer at a Littleborough Civic Trust meeting after the Boxing Day flooding had happened,

> "After the 2015 [floods], a council officer did actually attend one of the Civic Trust meetings and suggested the National Flood Forum. Then February 2015, I think we sort of linked in with Laura (National Flood Forum7, NFF) which has really given us valuable direction and guidance. We probably wouldn't have been the same group without Laura" (Evan)

It is notable that the council officer reached out to the members by physically attending a different meeting and starting a conversation there. Many other residents had fewer positive interactions contacting authorities. Brenda was originally passed around by many departments, before 'latching on' to someone at the council who listened to her and her neighbours,

> "Originally, we contacted various departments and were passed around. We then latched on to this guy in highways department. He actually took us on and listened to us. From there, we established a relationship. Unfortunately, he left Rochdale Council. That was really hard, because you could just pick the phone up and speak to him. Communication is the main thing. He would come on site and look at things, he made us feel more settled" (Brenda)

Here, Brenda suggests that it is not only finding the right authority or department who is responsible, but also that interpersonal relations are important, as she describes it being 'really hard' when their contact left. Shaun's experience was similar; after many unsuccessful conversations he spent time reading flood governance policy in order to understand which authorities were responsible

[7] The National Flood Forum (NFF) is a charity which aims to "help, support, and represent people at risk of flooding" (National Flood Forum website, 2020)

for what. Despite reaching the conclusion that RBC had overall responsibility for actions to be taken in their role as LLFA, he still found it difficult to convince them of this responsibility,

> "We saw that Rochdale Council are the Lead Local Flood Authority. Once you start doing the reading of it, you go through a learning process. If we had known what we know now, and we had known that in March last year, we would have been able to pin them down an awful lot sooner… The Lead Local Flood Authority, although they're not responsible for it financially, they're responsible for saying who is and who should be doing it and enforcing that" (Shaun)

Shaun's phrase of having to 'pin down' the council indicates that he had a difficult time finding someone who could help him, and also demonstrates his commitment and knowledge regarding flooding and flood governance. Janet also found a challenge in identifying the correct authority to contact,

> "The difficulty … is who owns what bit of land, and who's responsible for what. The whole area with our car park belongs to someone else, but the land above the gabion wall was partly private, partly Rochdale [Council]. All this going on - who does what? I think that's the challenge… who do you speak to?" (Janet)

Like Shaun, Janet found that knowing who is responsible for different sections of land becomes more complicated in reality, due to overlapping infrastructure ownership and misaligned responsibilities within flood governance. Laura (Intermediary, NFF) also highlighted how floodwater may come from different sources which residents may understandably not be aware of,

> "When people see a load of water coming into their house, they're not going to say "well, 30-odd-percent was United Utilities', and then 40-odd-percent looked like it were coming from the river, and there was a bit coming off the neighbours garden" (Laura, NFF)

In addition to a range of formal responsibilities and overlapping infrastructure ownership, Laura highlights how the flooding cannot be delineated into separate sources, as flood governance policy conceptualises. This comment suggests a potential cause for people like Brenda being 'passed around', since authorities may not be the only responsible actor in cases (which seem numerous) where there have a range of sources for the flooding.

Hilary highlights how she thinks that the responsibilities for flood governance presented in the Flood and Water Management Act have increased the complexity of flood governance,

> "When a flood has happened, it's not as bad now - we definitely try to work together – but [it used to entail exchanges of] 'it was their fault', 'No, it was your fault'. [That was] one thing the public get very annoyed about … why have we got all these different people dealing with [flooding]? All those different people should be under one banner" (Hilary)

This analysis aligns with the experiences of residents who feel that it is a challenge to identify the correct authority, as Hilary explains that RMAs have been known to disagree about where the responsibility for flooding lies.

This subsection demonstrates how accessing support can be a challenge due to a lack of clarity about responsibilities, or how flood governance policy conceptualisations of flooding struggle to translate to the reality. Successful accounts of accessing support usually involve the identification of a contact who the resident trusts.

5.3.4. Insuring against future flood risk: "I feel like I've got another mortgage" (Maureen)

Participants experienced renewing home insurance after flooding as a source of additional anxiety. Insurance provides the reassurance that repairs will be completed and is not governed by the state or flood governance, so in this way it can be understood as private flood governance. Participants explained how managing the repairs, paperwork, and insurance applications was often time consuming. Janet explained how mainstream insurance search engines yielded no results for flood insurance, so she had to undertake detailed searching,

> "Of the 77 companies in Go Compare, not one would touch it – except one, but without the flood cover. Then I started on more unusual companies, which took a while, and I eventually found one – wonderful – called Home Insurance, which in fact was a lower premium that I'd been quoted by others, I've just had to agree to £1000 excess if there was flooding, which is nothing compared with what renovations cost" (Janet)

Janet was able to agree to a high excess, but for many people that is not necessarily affordable. Maureen talked about how, after the first flood, she now does not pay for any of the 'add-ons' in her insurance policy, such as temporary accommodation, and is increasingly concerned about the affordability and availability of insurance the more she gets flooded,

> "I'm worried, come November, when my insurance is up for renewal again, because I've had two big claims with it. Are they going to renew my insurance? Am I going to have to look for someone else? Am I going to get insured again? If

> I can't get insurance again … I'm paying £100 per month. I don't have a mortgage, but I feel like I've got another mortgage" (Maureen)

Ian and his partner had a contrasting experience – their home insurance was barely affected, despite significant costs required to repair their home,

> "The house insurance went up £40, we couldn't wait to pay it – we thought it was a mistake – and it's not gone up anything since. Our insurance company were to be too good to be true. I know for other people it's gone the other way" (Ian)

However, Ian was upset that he could no longer insure his cars and continue his hobby,

> "I was, on average, buying a couple of cars a year, restoring them… I weren't making money, it was just my hobby. Now, I've lost that because no one will insure me" (Ian)

Shafana experienced some insurers refuse to insure her house due to the flood risk associated with her postcode.

> "Halifax bank won't insure me full stop, [the notice] comes up at the end saying 'you are in the flood risk area, we are not insuring you'" (Shafana)

Several participants explained that they had considered moving away from the flood risk. However, a property with history of flooding can reduce significantly in price and still be difficult to sell. Maureen's experience of getting a valuation demonstrates this,

> "My house was [initially valued at] £130,000… I didn't declare the flooding [initially] but the estate agent said to me 'Your house valued now [because of the flooding], it's £89,000'" (Maureen)

Although Brenda lives in a third floor flat, which is extremely unlikely to be flooded, she is also aware of the potential impact on her ability to sell her property,

> "It might well affect if I want to sell my apartment, when I have to say that there has been flooding in this area. Flooding can impact in other ways [than material damage], can't it?" (Brenda)

Shaun and his wife are aware of the impact, but also the emotional burden they would be passing on,

> "It has an impact on the value of the property, but it's much more, because I wouldn't have wanted to have got to the point where I'd sell the property knowing that there's a problem that I'm passing that on to somebody else" (Shaun)

Azeem had a different perspective; he explained how his family would not move house even if they could sell it, because of their social network and access to amenities,

> "My parents wouldn't move from here because everything's on their doorstep: doctor surgery's is five minutes' walk away, town's five minutes' walk away, cash and carry's five minutes' walk away, Mosque's five minutes, school's five minutes' walk away. That's their independence; they wouldn't rely on me to take them there" (Azeem)

Azeem's point highlights a tension between moving away from anxiety and stress arising from flood risk and feeling embedded in a community that meets the needs of the resident. Moving away may reduce stress, but it may be replaced by a sense of isolation from not having a strong social network around.

Difficulties in the process of navigating insurance companies was shared across participants. In some cases, once home, the reality of the 'new normal' – living in a state of flood risk – set in for participants, especially if they experienced repeat flooding, challenges with renewing insurance or selling their homes. Themes of anxiety, particularly in relation to feeling trapped and not being able to move away, arose in this subsection, demonstrating how flood risk anxiety can become an ongoing and long-term feature of everyday life.

5.3.5. Formal meetings: "… usually a couple of blokes with an information board" (Shafana)

This subsection focuses on the interactions within formal meetings between authorities and residents which may bring in additional dynamics from experiences leading up to the meetings and expectations arising from them.

Fakhira reflected on how a long time can pass between meetings, although they have been cancelled for understandable reasons,

> "The last meeting we had was definitely before Corona, so must have been last year I think. We were supposed to have a meeting with the Environment Agency last year, but then purdah was in place, so we couldn't have it. We were looking forward to shouting at them because that's what we're good for. Now it's

> Corona, so I don't think we'll be having any meetings anytime soon, but I don't think the Environment Agency will be too sad about it" (Fakhira)

While purdah and the pandemic have undeniable impact on being able to hold meetings, the lack of them suggests to Fakhira, and other residents, that they are not considered a priority by authorities. In the quote above, Fakhira talks about how she was looking forward to shouting at the EA. Being shouted at sounds very uncomfortable for EA employees, but Fakhira explained elsewhere why shouting is a last resort,

> "We compile a list of questions that we ask them, but most of the time, they never really give you an answer, they'll just give a load of waffle. If I'm being fair, I think sometimes they haven't got the answer. So, I'm not trying to have a go, because I'm glad that they're not just lying to us, and I don't think it's their fault per se that they haven't got an answer for us" (Fakhira)

Taking into account the challenges in contacting authorities, and then the frustration arising from not feeling as though any answers are provided, it becomes clearer how Fakhira can end up in the position of shouting at flood governance actors. Shafana, Fakhira's neighbour, felt that flood governance actors were unapproachable and unrelatable and puts it down to a lack of understanding about being flooded,

> "The environment agency is usually a couple of blokes with an information board and a few pictures and patterns. They stand there like politicians - they all say the right things without actually answering the question. Nor do I think they actually realize how bad [flood risk] is for people, because I think they live in worlds where these things don't happen... I don't think they know how to communicate with a person who's actually affected" (Shafana)

Neither Fakhira and Shafana mention being asked any questions by the authorities, which also indicates that the communication between residents and authorities may be one-directional.

Flood governance actors, such as James from the EA, expressed how they found meetings with residents particularly difficult if they thought they might be delivering unsavoury news,

> "We try to be transparent and honest, but it's not always the message [residents] want to hear. If we're saying that we're not going to be on site next year, and we're going to construct something that they don't want to see, people's reactions are different. Some people are perfectly understanding, and

> some people might let us know that they want things done quicker" (James, Environment Agency)

Laura (NFF) explained how she understood how residents might feel upset when engaging with flood governance actors at multi-agency meetings, due to a lack of thoughtfulness from flood governance actors in the language they used,

> "[flood governance actors can] get too corporate speak and they'll say, in front of a room full of people, [the approach behind] cost benefit analysis. You just think, 'phrase it slightly differently because you're more or less saying that your houses are not worthwhile'… It must be the most soul-destroying thing to hear that you are deemed not worthy to be protected, when a 10 million property down the road is being protected. We know money doesn't grow on trees, and we know you've got to be realistic, but it must be soul destroying" (Laura, NFF)

This observation by Laura suggests a mismatch of languages in communicating about flood risk, or flood governance interventions, as it suggests that flood governance actors are relaying information directly from their industry rather than translating it for the context. Maureen may be one of the 'perfectly understanding' residents that James' talks about above, but despite constructive engagements she does not feel confident they have an impact,

> "They're agreeing with me, they talk the talk, but then it falls on deaf ears. These are our homes, we need help, we need something...I just feel like we're on deaf ears, constantly on deaf ears" (Maureen)

Maureen seemed to experience interactions with flood governance actors as generally positive, but still she did not think the conversations had an impact, indicates how she describes the flood governance actors as having 'deaf ears', and echoing Shafana's experience above about flood governance actors seeming like politicians. Danny from United Utilities (UU) suggested that residents may not be aware of all the pressures flood governance actors have, indicating that some flood governance actors may feel slightly defensive against being lobbied,

> "Community groups are very good at lobbying, engaging and pressurizing to get solutions done in their catchments, as absolutely they should be, but I think there has to be a lens of engineering, health and safety, and governance that goes on with those proposals, as it's a consideration for the wider catchment"' (Danny, United Utilities)

This account reflects another reason, in addition to James' point above, why flood governance actors may feel defensive ahead of meeting with residents. It also suggests that residents do not know about the additional pressures, in which case they may require access to that information. However, given the disruption of flooding and knowledge of flood governance demonstrated by residents in above sections, it seems more likely that residents just have a different perspective on flooding and flood governance compared to flood governance authorities. The tensions arising from meetings suggests that the different perspectives are not well understood. Relatedly, Janet explained how she did not feel the actors in her meeting were being entirely honest with her,

> "I was in contact with NHBC, with Redrow - the builders, with the management of this [apartment block] … I remember one conference when different people from these companies were outside my patio door here, and I was standing there, and they were all saying this, that and the other. I thought to myself, in a cynical moment, these people have been on a very good fobbing-off course" (Janet).

Janet suggests here that she feels a lack of trust that the flood governance actors will tell her the truth, or useful information and that increased dialogue may help with this. However, increasing communication between people affected by flooding and flood governance actors is far from straightforward, as it involves genuinely very different knowledges, interests, values, and emotions being brought together.

Hilary provides a suggestion as to why there is a gap of understanding and trust between residents and flood governance actors,

> "I think this very niche approach to each individual community has to happen, that takes a lot of time, a lot of effort - I've not seen a huge change really in the community engagement, and how the community works together… [RMAs] like to pay it lip service, but true community engagement is not just going out and give them a bit of consultation. It's really, really working with them, and that takes years and years to make any changes" (Hilary)

This subsection highlighted that tensions are felt by both residents and flood governance actors in formal meetings. Patterns of cancelled meetings and hard to reach authorities may leave residents feeling frustrated before they even get to the meeting, and when they get there, residents may feel that they are not heard or engaged with meaningfully. Contrastingly, flood governance actors explain how they can feel on guard during meetings, when they know residents are likely to upset.

5.3.6. Ongoing interactions: “I'd hear this motorbike come into the carpark and [think] 'thank goodness John's here again'” (Janet)

In focusing on ongoing interactions, this is the first of a series of temporally defined subsections used to organise the various interactions between residents and flood governance actors. Ongoing relations here refers to the longer-term interactions relating to flood governance, which are compiled of many moments of encounter. The reason for highlighting the ‘ongoingness’ is that the previous subsections have highlighted how established relationships influence flood governance, such as knowing who to call or how residents feel about attending meetings. In this context, ongoing interactions are made up of meetings and correspondence, often between the same residents, since they are unlikely to move house, and flood governance actors, since they are likely to be on a project for a while.

The drainage engineer (RBC) explains how he likes to talk to residents if he thinks there is a straightforward explanation or resolution for a flooding issue,

> “I will tend to go out and talk to people, or I might get the information, go out incognito, have a look. Then I might know what the problem is, and I'll write a short summary as to what the problem is and what the resolution is. Sometimes I will talk to the person, it depends. If it's fairly straightforward and the council's fault, I'll go and talk to them directly, but if I think it's not the council then I'd rather just explain to them in email and then give my contact details, then they can ring me and complain afterwards. They really don't [usually follow up], but if you're on the spot with somebody, you're not really sure [how they might respond]” (Drainage Engineer, RBC)

The drainage engineer illustrates how he interacts with residents in most cases, but that if he cannot address the issues, due to professional remit, he prefers to communicate less directly. On the receiving end, Janet, whose ground floor apartment flooded, explained how speaking to and seeing a highways engineer supported her,

> “… there was a wonderful highways engineer with Rochdale at the time. Oh, he was a hero of mine. He used to ride a motorbike, and I'd hear this motorbike come into the carpark and thought 'thank goodness John's here again'. He really tried to get on with things. Rochdale is sometimes criticized, but I fully appreciated what they were trying to do in the circumstances, because we're not to not a wealthy borough” (Janet)

Janet's explanation demonstrates how the ongoing relationship instilled positivity and a trust in the authorities despite their lack of finances, as Janet felt that the engineer was trying his best. Kathy, who runs a charity on an allotment site, explained how she had a good relationship with several authorities,

> "We're also quite friendly with the Environment Agency (EA). We've been going a long time, and we're very successful so we're good for Rochdale. The EA helped to put the banks up slightly higher, but they've said that they can't put them up any higher. To begin with, that was all right" (Kathy)

Kathy explains how she understands her ongoing support from the authorities to be related to the status of the charity. While it is positive that she has good relationships and support, it suggests that charities are valued differently to residents. On the other hand, communicating flood risk to residents was highlighted by James as a challenge due to the complex nature of flooding and flood risk,

> "There are multiple sources of flooding in Rochdale Town Centre: fluvial risks along the river and surface water from the bowl topography. Because of those multiple sources of flooding, plus the exposure and the daylighting of the culvert, it starts to get very complicated, doesn't it? Explaining that flood risk, and some of the work that we're doing isn't always easy" (Senior Advisor, Environment Agency).

This excerpt is less directly related but suggests that clear communication about ongoing works is a complex undertaking.

In addition, Hilary highlights how ongoing interaction can be a challenge when residents may have more pressing concerns,

> "If someone can't get to work via the bus because they've changed the bus route, they're not bothered about the flooding, if someone's going to walk out around and get knived - that's more important to them than whether something is going to get flooded. We are battling with a lot of other things that happen" (Hilary)

This subsection has shown how ongoing interactions depend upon trusted working relationships between residents and flood governance actors. A reluctance to provide inaccurate information about a complex issue like flooding can be a challenge for flood governance actors when engaging with residents.

5.3.7. Sympathy for impacts of flooding: "it's... trying to [better] the quality of life within a community" (Gordon, RBC)

This section focuses on how people conceptualise flood impacts, including how residents understand flood governance actors' sympathy for residents' experiences and how flood governance actors understand the impacts of flooding on residents.

Participants demonstrated a range of opinions and experiences, but all were unanimous in their appreciation and support for Laura (NFF) who performs a community engagement role across flood governance in Rochdale Borough.

Shafana sees Laura as her only support network,

> "I don't know how much we could have done without Laura. Every time we have a problem, we just ring her. She's the only person who we can turn to when there's something going on" (Shafana).

Janet recognises that Laura is supporting many residents, and is grateful for her time,

> "Laura looks after me, looks after a lot of people, but looks after me, I'm much appreciative of that" (Janet)

Azeem found that Laura provided logistical support as well as emotional,

> "Laura's been great at coordinating stuff and sending messages out when she can, she's been a fantastic asset to have. Whenever there's issues, I've signposted people to her or vice versa. All kinds of conversations have been had" (Azeem)

Shafana, Janet, and Azeem all demonstrate strong trust in Laura, and suggest that Laura reaches out to them and helps them feel heard. All residents characterise Laura as approachable and good at listening, despite not necessarily being able to materially change anything,

> "I feel sorry for Laura, because I moan to Laura, and then Laura gets in touch with whoever she needs to get in touch with, and Laura does pull her finger out, but she can only do so much, can't she? She can go to the water board, and they can tell her what she wants to know really, but then nothing still gets done. She can go to the council, and ask them and they can tell her again, but she can't make them do it, can she? She can't make them do anything. No one can make them do anything until they're ready to do something about it" (Maureen)

By acting as the 'intermediary', Laura can support residents to make their voices heard, but she does not have much power to change decisions that authorities are making. flood governance actors appreciate Laura, and some see her as an extension of their own organisation. James (EA) explains how Laura represents the EA,

> "[Laura is] representing the Environment Agency, or at least the RFCC, in communities that we find it harder to get to often. I'm based in Manchester, our office is in Warrington. Rochdale is a 45-minute drive, we're not going to be there every day" (James, Environment Agency)

Gordon (RBC) also explained that Laura represents the community and the council,

> "Laura can represent community and she can represent the council. It's a really important role, because Laura creates a better positive relationship in the middle, where you can actually work with the community better" (Gordon, RBC)

Laura (NFF) is appreciated by everyone, and it seems as though she acts as an intermediary between everyone. From speaking to residents, they tend to see Laura as separate from authorities, but flood governance actors see Laura as a representative of their organisations. It is clear that her position is valued for bridging gaps that are evident without her.

Janet also felt that RBC had been supportive, and elsewhere explained how she was extra appreciative because RBC was not a wealthy council,

> "Rochdale have been pretty good and pretty supportive" (Janet)

By contextualising RBC in a wider picture of national wealth, Janet signals how scale can play out. If RBC is not awarded as much funding as other councils at a national scale, then the impacts trickle down to those on the ground.

However, interactions with other residents and flood governance actors was less positive. Maureen and Shafana explained how they did not feel supported by specific authorities. Maureen felt that the water company was ignoring her issue,

> "United Utilities - we call them a lot, they've known about it for five years, still not doing anything about it. I think it's just ignorant" (Maureen)

Shafana felt that no authority was taking responsibility for the issues in her area,

> "No experts - nobody - gives us any answers. There's a lot of palming off. United Utilities will say, well it's the Park Rangers or the path people who were

> supposed to sort this out. Council will be palming it off onto the Environment Agency, the Environment take no blame whatsoever for anything. Nothing is their fault by the way, they palm it off on everyone else, so we never get an answer" (Shafana)

Both Maureen and Shafana indicate feeling that authorities actively do not want to act on a flood governance issue. Brenda similarly felt that just getting authorities to listen could be an (important) challenge,

> "I think the main thing is trying to get people to listen to you, to understand what's happening, and realize that it's a situation where things need to be done now, instantly, this minute" (Brenda)

Not feeling listened to indicates a lack of concern, understanding or sympathy from the other party, and supports the points above made by Maureen and Shafana. Unlike them, Brenda was talking generally about engaging with authorities.

Despite the residents' perceptions of flood governance actors presented above as not being cared for, flood governance actors demonstrated concern for the individuals who are affected by flooding. Gordon (RBC) said,

> "At the end of the day, it's the person who's getting flooded that you're actually trying to work with. It's not a numbers game, it's actually trying to [better] the quality of life within a community" (LLFA, RBC)

James (EA) also indicated that their work is in the interest of people affected by flooding,

> "We are as keen, or almost as keen, to get these flood risk management works done as the people living there… All of these issues are project issues that we have to ensure are done, but sometimes it's difficult to explain that to the public" (Senior Advisor, Environment Agency)

James demonstrates a caring intent in this quote. The gap between the extent to which resident's feel as though they are not cared about by the authorities, and the values underpinning the work of individual flood governance actors is particularly evident in this section. It raises questions about what abilities flood governance actors have to implement caring solutions, what 'care' would look like for residents, and what the limitations of coming to conclusions on this topic are, based on the relatively small pool of participants.

This subsection shows how, although some residents did not feel listened to or supported by RMAs, flood governance actors explicitly demonstrated concern for residents at flood risk. This poses a challenge to resolve the lack of support that residents widely felt with the flood governance actors trying to do what they could. This raises questions about the extent to which an organisation can be said to show care, and how this might differ from whether individuals' perspectives. Some ideas may lie in better understanding the relationship between Laura and others. Residents and flood governance actors alike appreciated Laura's (NFF) work in community outreach; flood governance actors see her as an extension of their organisations, whereas residents see her as a steppingstone to contact other RMAs. Laura's success as intermediary may be down to both her friendly and efficient demeanour, and the role existing to bridge across various RMAs.

5.3.8. Fault, blame, and responsibility: "There's lot of buck passing" (Matthew)

This section is interested in whether residents and flood governance actors blame others for a lack of action, or the wrong action, and who the subject of that blame that might be. The motivation behind pointing blame is also explored.

It should be noted that while the term blame sounds negative, for respondents it links to the critical question of whether and how action will be taken to prevent future flooding in the same location. This is aptly illustrated by Shafana's comment,

> "Nobody wants to take the blame. It's not even a blame game. We just want to see something happen" (Shafana)

'Passing the buck' was used consistently as a phrase to describe authorities' approach to FRM. Matthew explained how authorities passed the buck to avoid 'owning up' to something,

> "There's lot of buck passing, where the local council will say 'Well, it's the Environment Agency's fault, or it's United Utilities responsibility'. You can never get any one of them to own up to something" (Matthew)

This account demonstrates Matthew's frustration at identifying who is responsible when authorities pass residents around. Brenda echoes this sentiment, explaining how authorities defend inaction by saying it is not their fault,

> "It's always 'Oh, God, what's going to happen this time?' Agencies do pass the buck, Juliet, 'It's not our fault. It's somebody else's fault. It's somebody else's fault. We don't know why it's happening' and so forth" (Brenda)

Brenda links her worry to not feeling confident that an authority will be ready to support her and her neighbours in the event of flooding. Maureen has a similar experience, where she has been passed between the council and the water company,

> “It's either Rochdale Council or United Utilities’ [fault]. But if you get in touch with United Utilities, they blame Rochdale Council. Rochdale Council blame United Utilities. No one will take 'yes it's us'” (Maureen)

Matthew, Brenda, and Maureen indicate in these accounts that they are having multiple one-to-one interactions with authorities, rather than all authorities coming together. Being passed around seems to not only result in residents feeling unsupported, but also suggests that authorities are not in contact with one another. This also relates to the points above where the formal responsibility for flooding can be complex due to ownership or multiple flooding sources.

Simon also experiences the passing the buck as others do, but he would be happy to take on the responsibility,

> “It's passing the buck "it's not my problem". The Environment Agency do a little to help, but the council don't want to do nothing... There's a lot of us round here - the council should say "it's not our problem, we'll get you all together, we'll let you sort it out between you", rather than leave it to individual people” (Simon)

Elsewhere, Simon talks about how this process should be funded, but his approach indicates that residents are happy to take on more responsibility, and that they would be capable of doing so. Shaun, who spent time researching flood governance structures and privately paying for his culvert to be mapped also felt frustrated at the lack of responsibility taken by specifically RBC,

> “The Councils don't want to know until something actually happens, and then they renege themselves of any responsibility” (Shaun)

Shaun, like Simon, already takes his own measures to manage flood risk around his home and wants to be involved more in the processes and understand the decisions taken by authorities. Fakhira has sympathy for the authorities when working in her area,

> “I don't want to stick up for the Environment Agency here, but one of the main problems in this area is the people themselves. They're constantly throwing things in the river. They're constantly throwing things in the street… It's got to be a team effort, the community's got to be up and showing willing, which most of them aren't. And then the Environment Agency, and the council, and

> everybody and there is no communication. And part of that the community has to take responsibility for as well" (Fakhira)

In contrast to Shaun and Simon's suggestion to be involved, Fakhira does not seem to think that a similar approach would work in her area. This is not necessarily to say that it would never work, but Fakhira highlights how her neighbourhood may present specific challenges.

Some flood governance actors also shared how they think that responsibility is avoided by other authorities, Trevor (UU) explained that,

> "[Councils are] very quick to point fingers, as soon as these flooding events [occur]" (Trevor, UU)

Later on, Trevor goes on to explain how the Council embeds blame into Section 19 reports[8] which are published by Lead Local Flood Authorities after a significant flood. Other flood governance actors understand a lack of agency or responsibility to be due to external causes, such as a lack of funding and capacity,

> "I work with the GMCA, with the Environment Agency and United Utilities.I think the partnership approach is great in theory, but in practice it sometimes makes things more difficult instead of more straightforward …they've been given these duties, with very, very little funding. I think they're firefighting … and not only funding - capacity is often one person, and they're doing all sorts of other things" (Hilary, GMCA)

Hilary highlights how structural limitations affect what an organisation may realistically be able to achieve. Such structural limitations may include competing aims across different authorities, as Fiona illustrates,

> "I had eight properties that had sewage inside them, and United Utilities said, "That's not our priority"… I was there and it was [a priority] - there are children and people who've got poor health in those properties… It is in UU's remit [to remove the sewage]" (Susan, FIO, RBC)

Differing priorities, which are governed by different organisations, can cause challenges to smooth partnership working and to the experiences of flooding. In the long run, ongoing clashes of

[8] When there is flooding in an area, a lead local flood authority must undertake an investigation and publish the results in a Section 19 report (*Flood and Water Management Act*, 2010)

interests is more likely to damage inter-agency working than aid it. James (EA) also brought up challenges with individual organisations having their own priorities,

> "That's not to say that the [River] Beal doesn't have a flood problem particularly … There are all these pockets of problems, but we have to assess potential projects on a priority basis (around [properties affected by flooding], available money, internal and external resource availability, and partners own capital programmes)" (James, Environment Agency)

In addition to differing priorities in the moment of flooding, authorities may have different overarching goals or methods for identifying the most appropriate investments. In this case, the EA have their own priority calculation, and depend on their own funding as well as external funding cycles.

As LLFA for RBC, Gordon found that some flood governance challenges arose from overlapping and complex governance boundaries,

> "The trouble with catchments, and local authority boundaries and sub-regional boundaries like Greater Manchester, is that they don't all line up … you're straddling regions with different organizations, different funding priorities, and potentially different issues" (Gordon, RBC)

Gordon contributes how, despite the complexity within a single authority boundary, flooding does not obey political boundaries. On top of the challenges mentioned above, there can be cases where many more authorities become involved due to water crossing boundaries. Rather than pinpointing any specific challenges, Hilary suggests that the system of flood governance requires improvement,

> "I don't know if we really are managing [flood governance] well. Some of the stats are quite interesting because the amount of money that was spent for the amount of properties that realized some benefit in flood risk reduction was an absolute drop in the ocean. Then you look at how much you've still got left, and climate change is going up, so that benefit is reducing" (Hilary)

Hilary was in the minority in demonstrating a deeply reflexive, even critical, perspective on flood governance. Through this reflexivity, she demonstrated a strong commitment to interrogating whether flood governance as a system is currently centred on the impacts of flooding on residents, which her analysis suggests it is not.

In this subsection, residents demonstrate a consensus that RMA's (often referred to as a homogenous 'they') 'pass the buck' and avoid responsibility. flood governance actors highlighted challenges in addressing flood risk arising from partnership working, and structural challenges such as funding structures and catchment boundaries which exacerbate this.

5.3.9. Section summary

This section has presented key sub-themes arising from the empirical data relating to experience of flood governance.

This section has highlighted how residents can feel ignored by RMAs through a lack of formal meetings, despite their being valid reasons for cancellation, such as purdah and the pandemic. A lack of understanding between residents and RMAs can result in flood governance actors being 'shouted at' and assumed to not give sufficient answers. Unsurprisingly, flood governance actors can be reluctant to interact with residents if they know that they are upset. These two perspectives on interactions can lead to a cycle of residents feeling 'passed around' and that RMAs are not doing enough.

However, this section also highlighted several constructive and positive relationships running throughout flood governance in Rochdale Borough. Residents' accounts of having a trusted and friendly contact demonstrated how feeling listened to was a separate important factor from seeing action on flood risk. Laura's role as intermediary between residents and RMAs was highly valued by all participants. Several flood governance actors demonstrated an explicit concern for residents' quality of life, even if residents were not aware, or did not feel as though this was the case. This finding demonstrates how even with flood governance actors who care about residents, there remain challenges within flood governance which leaves residents' feeling passed around and forgotten.

This section has also demonstrated how structural challenges might lead to (residents understanding of) RMAs' inaction. In particular, a reliance on partnership working among RMAs within flood governance can be stunted by tensions with varying organisational priorities and strategies, as well as logistical barriers such as funding cycles and structures. Furthermore, an overarching challenge relates to a perceived lack of funding for RMAs to be able to undertake their responsibilities effectively, with the current system being equated to 'firefighting'.

5.4 Chapter conclusion

This chapter has provided empirical data relating to experiences of flooding and flood governance in Rochdale Borough. The chapter presented the empirical data thematically, with each section organised into subthemes that emerged throughout the coding process. By presenting a range

of perspectives alongside one another, the chapter has sought to typify the range of experiences of flooding and flood governance within Rochdale Borough.

Accounts presented in Section 5.2 illustrate how flooding experienced by residents has a clear start, when the water crosses a particular boundary. This can begin as a surprise if not experienced before, but that after the first flood, residents occupy a state of flood risk. After the time-consuming work required to clean up, repair, and rebuild, residents highlighted how they occupied a new normal state of anxiety and felt trapped in a cycle of flood risk, and difficult to sell houses.

The discussion in Section 5.3 highlighted how flood governance can have a significant influence on residents' experiences of flooding. This can be both positive and negative. Where residents established relationships with flood governance actors they felt listened to and engaged in the process, even in cases where they knew that flood governance actors were not able to make a material impact. On the other hand, many residents recounted the feeling of being 'passed around' by RMAs when trying to access support, and when trying to secure affordable insurance. Flood governance actors provided evidence of constraints to partnership working involving differing strategic priorities, funding structures, and catchment boundaries mismatching with authority boundaries. In addition to this, whether the funding provisions for flood governance are sufficient, especially in the context of climate change, were questioned.

This chapter has sought to address RQ1, 'What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?' by providing empirical accounts of the moments around flooding, and experiences of flood governance. This chapter provides a 'raw' foundation from which to interrogate the extent to which the theoretical climate justice framework is fit to capture the concerns and needs of people affected by flooding in Rochdale Borough, which is the focus of the next chapter.

Chapter 6 | The potential for operationalising a climate justice framework for investigating flooding in England

6.1 Introduction

The aim of this chapter is to address RQ2 'To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?' This RQ is addressed by reflecting on the empirical data discussed in the previous chapter, using the analytical guiding questions for each of the tenets of justice presented chapter 2. This chapter attempts a tentative application of the climate justice framework to the empirical data before reflecting on the extent to which it yields findings anticipated. In addition to understanding how suitable the framework is, I consider more about how it might be used and by whom. One aim of the framework is move away from a universalising 'average' way of discussing flooding and related impacts to capture more nuanced and insightful accounts of the ways that people are affected.

As discussed in the chapter 4, I intentionally structured my interviews unrelatedly from the climate justice framework, in order to leave space for participants to talk about their experiences of flooding without being led by me. This approach left space to investigate whether the needs and concerns of participants are captured by the climate justice framework without guiding participants' answers. Resultingly, the contents presented in the chapter cannot provide the empirical basis for an in-depth analysis of climate justice. Instead, the partial application seeks to highlight what kinds of findings arise from the climate justice framework, the extent to which these are aligned with participants perspectives, and what role they might have in understanding climate justice for climate adaptation in England.

This chapter is structured as follows. First, I revisit the theoretical climate justice framework and highlight the analytical questions for each tenet. Secondly, each tenet of justice is considered in turn to elucidate what can be learnt about flooding experiences in Rochdale and whether each lens contributes to a climate justice approach. The final section of this chapter presents a discussion on the usefulness and usability of the theoretical climate justice framework, concluding that the climate justice framework is both useful and usable, although there are some key considerations which should be investigated for a broad application of the framework. This chapter provides confirmation of the solid theoretical foundation of the climate justice framework, which justifies the application of the framework to flood governance policy in the next chapter.

6.2 Tentative application of the climate justice framework

Tentative application of the theoretical climate justice framework picks up on the analytical framework discussed in the methodology (p. 95) and the analytical questions have been slightly

modified for the application in this chapter. This section seeks to consider whether the concerns presented in the previous chapter align with the tenets of justice within the theoretical conception of climate justice, to gauge the feasibility of climate justice as a framework for investigating flooding in England. It addresses each tenet of justice within the climate justice framework: justice as recognition, procedural justice, capabilities approach, and epistemic justice. For each tenet, an account of what can be understood from the interview data is presented, followed by the implications of the findings for understanding climate justice in England using the framework more broadly.

6.2.1. Epistemic justice

This section overlaps with the earlier tenets of recognition and procedural justice, but there are some unique aspects of epistemic justice which are worth considering separately. This section focuses on the epistemic and intellectual positioning of residents to highlight the valuable experiential knowledge developed through experiences of being flooding and of navigating flood governance, and addresses the guiding question of,

- What experiential knowledge do residents demonstrate?

What experiential knowledge do residents demonstrate?

All residents began the interviews by talking about the first time they experienced flooding, and then moved on to subsequent floods. This ordering could represent a natural approach to storytelling, but also suggest that participants did not experience flooding as separate 'events' within a neat respond-recover cycle but experience flooding more like an ongoing state of (varying) potentiality that begins with 'the first flood'. In addition, the range of ways which residents become aware of flood risk illustrated how participants demonstrate a detailed expert knowledge of water flow in their locality, the range of measures they take to keep a check on this, and the ways that they are affected by it.

Participants recounted memories and experiences which demonstrated that they hold unique, specific, and complex knowledge around flooding in their local area. For example, residents talked about watching water to understand potential flood risk, sharing communication with neighbours, building personal flood defences, engaging in critical reflection regarding resources, and holding concern for how unaddressed flood risk might affect known or unknown others. Furthermore, since participants talk about how 'flooding is only the start', the potential for experiential knowledge grows as participants develop a deeper knowledge about their own flood risk and flood governance more broadly.

The experience of flooding had a clear start, but after that, participants had different experiences of time taken to clear up, repair, rebuild, and readjust. The range of experiences

demonstrate not only that flooding experiences are dynamic, but also that there is not a clear 'event cycle'. Without the framing of flooding as an event, climate adaptation processes shift from responding to discrete moments to navigating a constant state of potential. This shift of conceptualisation has implications for the climate justice framework, especially in relation to phasing of 'prepare – respond – recover'. This finding links back to the discussion in chapter 2 relating to flexibility in how climate risks are conceptualised, especially by those who are experiencing them.

Participants explained how they used their experiential knowledge to help themselves and their social networks to be aware of and respond to flood risk. However, accounts presented alongside each other surface how different abilities and characteristics can result in varying levels of vulnerability, even to very similar flood events. For example, most participants talked about undertaking FRM with ease. However, Maureen, who has COPD, and whose partner has disabilities, struggled to put out sandbags. This demonstrates how existing health conditions can render undertaking FRM more challenging. In addition, Shaun and Carol talked about spending tens of thousands of pounds on building a bund in their garden. Other participants talked about worrying about flood insurance, suggesting that they do not have spare money to undertake expensive personal flood defences. While experiential knowledge is valuable for individuals, understanding the range of experiences reveals how health conditions and financial situations, for example, can increase or reduce vulnerability.

What are the implications of findings regarding epistemic justice for the climate justice framework?

Discussions in the other tenets of justice highlight the ways that residents are recognised as knowers or included in processes where they could share their knowledge. In addition, from residents' accounts of experiences of flooding and flood governance, they demonstrate a desire to be part of flood governance discussions relating to flood risk in their areas. Given that residents can be considered to have a type of expert knowledge and seek to be (more) involved in flood governance, and that experiential knowledge could be beneficial to flood governance, it stands that even from the empirical data presented, there is much potential for improvement to flood governance through consideration of epistemic justice.

6.2.2. Justice as recognition

This subsection first enquires how the data presented in the previous section relate to the questions. Justice as recognition in this thesis was defined as seeking to uncover the ways that institutions can incorrectly, or fail completely, to recognise certain groups. The theoretical climate justice framework posits the following guiding questions which are used to structure this subsection:

- How are residents recognised in flood governance in Rochdale Borough?

- Who are gatekeepers of recognition?

How are residents recognised by flood governance in Rochdale Borough?

Justice as recognition holds the assumption that residents should be recognised as valid knowers. This tenet of justice recognises that people affected by flooding hold valuable experiential knowledge about many different aspects of flooding (in addition to valuable knowledge they may have from other sources e.g., formal training). Experiential knowledge will be examined below and is included here because it is one of the ways that climate justice asserts that people ought to be recognised within flood governance. This subsection serves to demonstrate how, while residents demonstrated these knowledges, it is apparent that the flood governance arrangements do not have space for inputting experiential knowledge of residents.

Maureen's experience explained how she has flooded several times since 2015, so is well experienced in managing and responding to her personal flood risk. In relating to ongoing communication that she has had with Risk Management Authorities (RMAs), she explained how their interactions wither her, "In all honesty, it feels like it's an insult" (p. 127[9]). This example demonstrates how RMAs recognise Maureen as someone who is affected by flooding, but not someone who may be an epistemic subject, meaning able to offer valuable insights relating to the flooding. Additionally, exploring this lens of recognition enforces the climate justice claim that recognition stands independently to other tenets of justice, as the very experience of not feeling sufficiently recognised, "they've known about it for five years, still not doing anything about it. I think it's just ignorant" (Maureen, p. 139), can be frustrating and upsetting.

The empirical data also evidenced ways that residents can be recognised by flood governance actors. Some flood governance actors characterised community groups directly, through descriptions of them as lobbyists, "Community groups are very good at lobbying, engaging and pressurising" (United Utilities, p. 134), or residents as a range of understanding and quick to criticise "Some people are perfectly understanding, and some people might let us know that they want things done quicker" (Environment Agency, p. 133), and unpredictable "if you're on the spot with somebody, you're not really sure [how they might respond]" (drainage engineer, p. 136). Flood governance actors' comments show how they characterise residents and community groups' interactions through assumptions, which may create distance between the residents and flood governance actors.

[9] As explained in the methodology (Section 4.6.3), in this chapter I draw on empirical quotes first introduced in chapter 5 to illustrate particular points relating to the climate justice framework. The page number indicates when they were first discussed.

Residents' experiences and flood governance actors' excerpts illustrated how residents are not (always) recognised in flood governance interactions. Following the theoretical climate justice framework, the act of non-recognition can be understood as an injustice because residents are not *recognised* as important stakeholders. Furthermore, this injustice omits the potential to recognise residents' experiences as a valuable source of knowledge and understanding. This latter point reveals an intersection between justice as recognition and epistemic justice, which is discussed more below.

Who are gatekeepers of recognition?

The 'gatekeepers' of recognition can be understood as actors and organisations who can decide who gets recognised or not. Since RMAs deliver flooding policy, and flood governance actors work within those authorities, flood governance actors can be considered as a type of gatekeeper. Laura (National Flood Forum intermediary) explained how she has observed that, despite legitimate reasons for prioritising actions and investment, if these are not properly communicated such decisions can come across as upsetting to residents, "It must be the most soul-destroying thing to hear that you are deemed not worthy to be protected, when a 10 million property down the road is being protected" (Laura, p. 134). Flood governance actors may be able to change individual interactions, but Hilary highlighted how there are also significant structural barriers in the way of RMAs engaging with the public, "[RMAs] like to pay [engagement] lip service, but true community engagement is not just going out and give [residents] a bit of consultation" (Hilary, p. 135). Here, Hilary shows how gatekeeping happens at a higher institutional level as well as at an individual level. Hilary's point also points to wider considerations about the resources, remits, and performance indicators associated with a particular flood governance role. It may be possible that flood governance actors have limited agency on the extent to which they can increase recognition of residents, resulting in a hierarchy of gatekeeping.

What are the implications of findings regarding justice as recognition for the climate justice framework?

One key reflection of recognition relates directly to my research design: the nature of my methodology means that I interviewed residents who *have* been recognised in some way by flood governance actors, since my gatekeeper was a flood governance actor. Resultingly, I only spoke with residents who have interacted with the RMAs in some way. A limitation of this research is that I have not been able to speak with people who have not interacted with RMAs in any way, a perspective which would be a valuable addition to this discussion. Nevertheless, the empirical data presents a rich discussion which I will continue to draw on for the rest of these reflections.

A consideration of justice as recognition highlights how there requires an awareness that there must be a person or a process undertaking the decisions, referred to here as a *gatekeeper*. Through this awareness, recognition becomes an exchange where someone (e.g. a flood governance actor) has to enact the recognising to another (e.g. a resident), and that the actions of the gatekeeper (flood governance actor) to recognise can be constrained by another actor (e.g. a RMA). Through this lens, recognition can be understood as an iterative process where a resident is not either *recognised* or un*recognised* but is attributed a label of being *recognised in a particular way* through a process. The important aspect here is that recognition is not a state achieved in a single moment, but is practised through ongoing and interacting political actions, which can also serve to reinforce hierarchies. It follows that recognition is not a binary concept, but a dynamic continuum situated in and shaped by a specific context. Furthermore, as illustrated above by Maureen, even a resident who flood governance actors may feel they have recognised may not *feel* recognised (e.g. through not feeling heard). The process(es) of recognising requires repeatedly considering including, asking, and understanding, and that actors may have varying perspectives. A significant implication arising from this for the climate justice framework is that recognition becomes complex to identify, and processes are challenging to follow, e.g. actions of recognising in one instance may be undone elsewhere.

6.2.3. Procedural justice

Procedural justice in this thesis was defined as considering how participation works, the extent to which processes are transparent, and reflexivity in decision-making. The theoretical climate justice framework posits three guiding questions for investigating procedural justice which are used to structure this subsection:

- How are residents involved in flood governance?
- How transparent is flood governance?
- How is learning incorporated in flood governance?

How are residents involved in flood governance?

Flood governance was defined as the formal and informal network of systems and processes which manage and respond to flooding. The empirical data demonstrated that residents undertook their own, short and long-term, personal flood risk management (FRM), usually before and separate from engagement with formal flood governance actors. Personal FRM took various forms, including putting out sandbags (e.g. Shafana and Maureen), deploying property level protection (Farhana), and digging a bund (Shaun). While personal FRM does not necessarily need to engage with the flood governance practises of RMAs, there is an overall impact on reducing the support required by residents after experiencing flooding. Therefore, personal FRM could be considered to indirectly reduce the workload of flood governance actors. This does not directly address the question of

residents' involvement, because it is a self-guided practise, but the observation serves to reinforce the identities of members of the public as autonomous and creative risk managers.

Turning to interactions within flood governance, residents reported not finding it easy to get in touch with RMAs: Brenda, Janet, and Shaun all recounted being 'passed around'. This barrier to engagement may relate to procedural justice; residents may have been recognised as affected by flooding despite not being engaged by RMAs. This may result from the complexity of applying the flood policy, whereby RMAs were not in agreement as to whose responsibility it was to interact with the residents. As Laura explained, residents cannot easily estimate the volume and source of floodwater "well, 30-odd-percent was United Utilities', and then 40-odd-percent looked like it were coming from the river, and there was a bit coming off the neighbours garden" (Laura, p. 129). In practise, it is not possible for residents (or possibly anyone) to identify the sources of flooding in the moment. Due to this complexity, and possibly a lack of capacity, RMAs may end up telling residents the specific issue is not within their remit.

Some residents who (sometimes eventually) managed to identify a flood governance contact to help them spoke about not feeling heard or listened to, which was a major issue for Brenda, "the main thing is trying to get people to listen to you, to understand what's happening" (p. 140). A clear exception was how all participants felt about Laura, who acts as a kind of intermediary between and within RMAs and residents. Azeem's quote is an example of this, "Laura's been great at coordinating stuff and sending messages out when she can, she's been a fantastic asset to have" (Azeem, p. 138) Rather than listening being important due to directly related to material outputs, this section demonstrates that the process of listening is important to residents. In the section above, many participants referenced not feeling heard, understood, or listened to. The theme of listening here can be considered as part of communication but, by highlighting the act of listening, the emphasis becomes on not only what is said but how it is received and the arising dialogue.

The empirical data does not provide an insight into the mechanisms and procedures through which residents are included in flood governance. However, the empirical data does offer many perspectives of residents where they explain how they find it hard to access RMAs, and when they do, can often struggle to feel heard. Laura's intermediary role is clearly highly valued by all participants - residents and flood governance actors - demonstrating the value of coordinating communication among and within flood governance.

The findings from this guiding question indicate that existing procedures within flood governance seem to be fragmented. Among RMAs, this was highlighted by flood governance actors to be due to barriers in delivering partnerships, such as differing strategic priorities, funding cycles, and

boundaries. When discussing their engagement with RMAs, many residents expressed the feeling of being 'passed around' and struggling to make contact with flood governance actors. However, for the residents who did, interpersonal relationships seemed to play an important role and relationships with flood governance actors were valued by residents even when there was no material solution.

How transparent is flood governance from the empirical evidence?

Some participants, including both residents and flood governance actors, expressed frustration at the complexity of accessing information to help them deduce how they could progress FRM matters. For residents such as Shaun, finding out who was responsible for different infrastructures provided a way to hold to account, authorities regarding their responsibilities. For flood governance actors, as Laura explained, even with clear information regarding flood governance, complex land ownership and different sources of flood water can render it almost impossible to isolate the responsibilities in practice.

The ability to access information can be broadly considered an issue of procedural justice. flood governance policy is informed by a range of knowledges: ecology, hydrology, engineering, sociology or anthropology. These influences may be either available but incomprehensible and therefore inaccessible, or simply not available because of commercial confidentiality (where e.g. the works is contracted to the private sector.) Additionally, while policy documents are publicly available, that does not mean it is necessarily accessible for everyone. Furthermore, information regarding flood risk and flood governance may be relevant for an audience wider than just people already affected by flooding, for example including prospective homeowners, planners, and organisations. Information in this context is not reduced to flood governance policy; it includes being able to successfully contact relevant authorities and engage in constructive interactions, and conversely that flood governance actors may seek empirical information from affected residents. Relevant procedural matters for this might include ensuring staff with flood governance-related roles are appropriately aware of flood governance policy and process, that there is a clear process for engaging with residents, and that residents are seen as people with valid experiential knowledge.

Transparency considerations could improve understanding relating to which knowledges inform policy and how they interact. This may include a finding that residents are not the only people not included with knowledge which matters, and not the only people in the system as a whole who suffer from unevenly distributed knowledge. A transparent flood governance could also reveal deeper understandings regarding overall responsibility within flood governance, ability to enact roles and responsibilities (e.g. impacts due to a lack of funding), and processes of communication and partnership working

How is learning embedded within flood governance?

Some residents, such as Shaun, demonstrated how they learnt about who was responsible for what, in order to inform their ability to ask for support, "Once you start doing the reading of it, you go through a learning process. If we had known what we know now, and we had known that in March last year, we would have been able to pin [flood governance actors] down an awful lot sooner" (Shaun, p. 129). This illustrates how residents can be active and engaged with flood governance decisions relating to their own situations.

There was not explicit mention of learning within RMAs in the empirical evidence. Hillary (GMCA) likened the responsibilities given to local authorities through national policy to 'firefighting' (p. 143), due to the lack of investment accompanying the increasing work. Residents were understandably frustrated at the feeling of being ignored, but they authorities equally have challenges in identifying who is responsible for what and selecting which of many priorities their limited resources should be directed to. Therefore, a lack of action may be related to not knowing who is responsible rather than RMAs not wanting to act. Challenges such as this may come down to the complexity mentioned above of applying flood governance policy in practise.

What are the implications of findings regarding procedural justice for the climate justice framework?

The lens of procedural justice to investigate the empirical data reveals several reflections regarding the appropriateness and applicability of the climate justice framework.

Regardless of the range of experiences, and despite my contact with all participants resulting from their engagement with RMAs, many residents did not feel that they were involved enough, listened to, or considered within flood governance. Participants' accounts suggest that they seek to be involved in flood governance. Firstly, that participants gave up their time to be part of my research suggests that they think it matters, or at least affects them. This may also mean that there are participants who do not think it is important, and are not part of my research, but there may be other reasons people did not take part. Secondly, participants demonstrated how they were aware of the different stages of flooding: from potential flood risk to the long-term implications of local construction. Being so engaged in general awareness of flooding is unsurprising given the extent of impacts recounted in the previous section, and it is likely that participants would also be eager to be engaged in local governance processes relating to them.

The scalar implications of a procedural lens highlights how flood governance processes are multiple, overlapping, and ongoing. For residents they may start after a flood, but they are part of a long-term workload for flood governance actors. A consideration of the scalar impacts raises questions

regarding flood governance processes, in particular what stages are residents involved in flood governance? Are they all involved collectively or individually? What are the implications and consequences arising from these decisions? In its current form, the climate justice framework is unable to reveal much information in response to these questions.

Furthermore, there are temporal considerations related to when the flooding occurs, with differences between floods occurring at night, or in winter, or during a national holiday. The time (as well as scale) of flooding may have implications for response, relating to support networks, helplines, and insurance companies. Azeem talked about how, because Boxing Day is a national holiday, many people were available to support one another with flooding. However, as participants discussed, flooding can occur at any time.

Spatial scale of influence recurred within procedural elements of the theoretical climate justice framework. In several examples, such as maintenance of the complicated culvert in Milnrow, the scale of influence differed from the scale of impact. If the culvert is not cleared sufficiently, residents in Milnrow are affected by the resulting flood risk, but it is national policy which provides oversight for who is responsible for the culvert maintenance. Furthermore, I spoke with participants who had experience flooding as an isolated issue in their home and participants who were affected along with many others by the Boxing Day 2015 floods. This also relates to an understanding of procedural issues as interrelated but not modular. Specific aspects of procedural justice may overlap but they do not neatly nest at different scales.

The findings of this subsection for the climate justice framework raise questions about the application of the framework, such as who applies climate justice, how do they apply it and to what end? These considerations are especially important given the empirical presentation of flooding experienced as a shift in normal life, rather than an event. This shift emphasises climate justice as a practice rather than a goal.

6.2.4. Capabilities approach

During the interviews, I deliberately left the questions about flood experiences open in order that participants self-select the key issues relating to flooding. As a result, it is possible that some capabilities were impacted which participants either did not think were priorities or did not have time to answer. For example, the capability to play did not come up in the empirical evidence, but this should not be taken to mean that play is not impacted by flooding. Given the interview focus on experiences of flooding, empirical data relating to the capabilities was numerous. Some capabilities overlap with other tenets and where this occurs, I consider only the aspects of the capability that are not covered elsewhere.

What does the empirical evidence reveal about how capabilities were impacted by flood experiences?

A reminder of the ten capabilities is: life; Bodily Health; Bodily Integrity; Senses, Imagination and Thought, Emotions; Practical Reason; Affiliation; Other Species; Play; and Control over one's environment. Although the capabilities have been discussed in this order (Nussbaum, 2000) thus far in the thesis, here I deviate to explore them as they appear in the data. The capabilities that came up very little in the empirical data – life, bodily integrity, other species, and play – these are discussed first. Then I turn to capabilities which had some coverage – practical reason, affiliation, bodily health, and control over one's environment. The subsection finishes by presenting the many ways that emotions and senses, imagination and though were present in the empirical data.

Life

The capability of life was not directly discussed in the empirical data, most likely because none of my participants' lives were directly threatened from their experience of flooding. However, Maureen discussed how her neighbour suffered a heart attack from putting out sandbags. This reflects that there remains a threat to life from flooding. Indeed, as illustrated in Table 3-1 (p. 43), several people in England have lost their lives from flooding-related impacts in the past. Furthermore, the flooding in Germany (2021) led to 220 fatalities, and flooding in Pakistan (2022) led to over 1700 fatalities, providing a stark reminder of the fatal potential of flooding.

Bodily Integrity

Themes of bodily integrity did not present in the data, although it remains important. This could be for several reasons, but perhaps most likely that it is a very sensitive topic which may require a deep trust for it to be brought up. Given that flooding experiences include high levels of stress, and that disaster-related instability has been linked to domestic violence, that it did not appear in the data does not necessarily render it irrelevant.

Other Species

There is considerable potential for a climate justice framework to engage with and centre non-human animals. While I have not employed that approach in this thesis, relationships between human and non-human animals were impacted by flooding. Maureen recounted how her relationship to pets was affected by flooding, as the temporary accommodation did not take her dogs into consideration. In addition, Ian's fish were killed during the flooding event, although he did not express as much concern as Maureen. Furthermore, as Shafana explained, the polluted floodwater can have impacts on biodiversity, wildlife, and plants.

Play

While the capability of play did not come up relating to the flood event itself, there were long-term implications for leisure activities. For example, Ian is no longer able to restore cars due to insurance limitations and the worry that they might be scrapped if there was another flood. In addition, there are possible indirect consequences for play and leisure resulting from increased worry and mental health impacts. This capability highlights how play may be latently impacted, and for a long time, since flooding and engaging with flood governance may occupy leisure time.

Bodily Health

Participants, mainly residents, talked about physical and mental health impacts arising from the flooding. Mental health issues included anxiety, worry, and stress. Health concerns occurred at all stages of flooding, with worry and stress in particular recurring throughout accounts, suggesting that they became long-term states. Physical health concerns also arose, such as Maureen's physical ability to lift sandbags, and not being able to live in a damp house due to COPD. Susan explained how she had to balance risk of illness from sewage against risk of catching covid while responding to flood events.

Practical Reason

According to Nussbaum, the capability of practical reason involves "being able to form a conception of the good and to engage in critical reflection about the planning of one's life" (Nussbaum, 2000, p. 79). All participants brought up reflections and learnings they had from experiences of flooding, often constituted by the types of interactions they had, ability to access information and support, and expectations. Residents mentioned both interactions and interventions: LFLAG appreciated being reached out to, Azeem talked about how with everyone working together they managed to do a lot of clearing. Flood governance actors mentioned overcoming challenges relating to partnership working and funding: Gordon (RBC) talked about how RBC finds creative approaches for partnership working, despite an overall strain on funding, and James (EA) explained how the EA were developing a tool to map out different funding cycles. These accounts of learning span across a single event or interaction to ongoing partnerships to overarching flood governance interventions.

This capability links to experiential knowledge (epistemic justice), which can be considered a precondition for the capability to critically engage with practical reason. A capacity to act on practical reason also links to being *recognised* as being capable of reasoning within just and inclusive *procedures*. While residents demonstrated an interest in and desire to engage with the impacts of flooding on their lives, there are several examples of a lack of recognition and procedures which encourage this.

Affiliation

Affiliation refers to two aspects: concern for the lives of others, both relating to known and unknown people, and being entitled to non-discrimination based on protected characteristics. A discussion of the latter is covered above in recognition, so I will focus on the former here. Most notably, several residents (Shafana and Maureen) discussed how they felt concerned for neighbours during the moments of the flooding, but that they were not able to offer support as they were busy trying to manage their own flood risk. Some flood governance actors, such as Gordon and Laura, remarked how their work is underpinned by a concern and care for the residents who are affected by flooding. As demonstrated by Janet's refection of the highway engineer, "[who] really tried to get on with things. Rochdale is sometimes criticized, but I fully appreciated what they were trying to do in the circumstances" (p. 136). This evidence along with the appreciation of Laura, suggests that good relationships improve understanding, patience, and collaboration regardless of material changes.

Control over one's environment

This capability refers to two separate aspects, political and material. The first links directly to participation, which overlaps with the other tenets. The second aspect is material, concerning control over material possessions. This was a fundamental aspect of participants' experience of flooding, as their accounts of material impacts range across different stages of the flood. The material possessions of concern range from sentimental possessions, such as furniture and photos, to larger items, such as cars and houses. The implications of flood risk on house price were highlighted by several participants.

Senses, Imagination, and Thought

Aspects of this capability include imagination, including imagined futures, and the ability to reason. In the interviews, residents spoke about imagination in relation to what they had expected to happen, and expressed disappointment, frustration, or distress if things did not turn out as they think they should have. For example, Fakhira explained about being 'good for shouting at flood governance actors', but throughout her interview it became clear that she was both aware and sympathetic to the pressures facing RMAs and flood governance actors. Furthermore, she undertook research relating to flooding and flood governance ahead of meetings in order to try and make the most of them. When she was faced with 'men with clipboards', as her neighbour Shafana put it, and does not feel listened to, resorting to shouting at them (due to frustration) makes more sense.

This theme of expectations of imagined futures further solidifies flood governance as an ongoing process, through conceptualising experiences of flooding as compiled from many different interactions, events, and envisaged outcomes. Expectations also exist in wider understandings of society and politics, for example, Janet explained how she thought RBC were doing a good job in the wider context of limited resource. Wayne, on the other hand, expressed frustration that RBC were not

doing more to help his blocked culvert, as he had understood it was their responsibility as LLFA. Despite being frustrated, Wayne explained how he saw political dimensions as potential explanations, linking increased flood risk in his area to the construction of the M62 in the 70's and resulting from ongoing financial tussles between national and local politics. The theme of expectations is included here in order to link experiences of flood governance to a broader social landscape.

Many participants, residents and flood governance actors, demonstrated thinking and reasoning through considerations of flooding and flood risk. Compared to the capabilities discussed so far, this highlights how participants drew on imagination and reasoning as a way to navigate experiences of flooding, rather than the capability being hindered in some way.

Emotions

Nussbaum claims that the capability of emotion should allow people in general to 'to love, to grieve, to experience longing, gratitude, and justified anger'. Applied to a flooding context, it is evident that emotions are a common part of experiencing flooding. For example, some residents, such as Shaun and Ian, talked about stress and worry relating to flooding, although they rarely linked this explicitly to sadness or grief. Others, such as Azeem and Evan, talked about the conviviality and coming-together of the flooding clear up. As above, Shafana talked about frustration and anger.

What is less clear is whether, particularly through the delivery of flood governance, residents' emotions are welcomed, or even tolerated. For example, James (EA) highlighted how engagement can be difficult because residents are, understandably, upset. Similarly, Fakhira, identified how she was "looking forward to shouting at [flood governance actors] because that's what we're good for" (Fakhira) (p. 132). The nature of engagement being 'difficult' in this context suggests that the engagement is not designed to include or explore such emotions, for residents or flood governance actors. Given the praise for Laura and comments about how much she tried, regardless of the material impact, it may be that her recognition of emotional responses could be key to her popularity.

What are the implications of findings regarding the capabilities approach for the climate justice framework?

The overview of the capabilities approach presented above illustrates five key implications relating to its inclusion in the climate justice framework.

Firstly, due to the analysis focusing on the experiences of individuals, employing a capabilities approach can provide insight into how residents are affected differently by flooding. For example, through the accounts discussed in the previous chapter, it was evident that some people experienced more disruption to their lives than others. The capabilities approach provides a way of understanding the many different forms such disruption may take, whether it affects bodily health, play, or other

species. In addition, the analysis of individual accounts of flooding highlights concerns of recognition, for example, how existing health conditions may lead to more disruption.

Secondly, a capabilities approach highlights how flooding disrupts capabilities in different ways and across different times. Some capabilities, such as life and health, can be linked to the direct moment of the flooding. Impacts on other capabilities, such as play and practical reason, can arise after the water has receded. In general, capabilities seem to emerge and dissolve at different rates for different people.

Thirdly, two capabilities were absent from the empirical accounts. This might arise from the research design, due to an interview approach which did not explicitly question participants on capabilities. However, this does not mean that the capabilities of life and bodily integrity should not be considered. While danger to life may be low for flooding in England at the time of writing this thesis in 2023, it may become more apt with the increasing estimated of disruption. While violence and disaster are linked in other studies, due to the sensitive nature of bodily integrity, it may require a careful research approach for further investigation.

Fourthly, reflecting on the capabilities highlights how although some capabilities were impacted negatively by flooding, others were employed by participants to navigate and manage their experiences of flooding. For example, within affiliation, the empirical data illustrates how participants engaged with flooding as a collective issue: sharing warnings and alerts with friends, neighbours, and family, helping others to get back home or to a safe place, and sending possessions away to be looked after by family. On the other hand, there were some cases where participants were not able to help even though they wanted to.

It is also apparent that the capabilities appeared in the data in different ways. For example, the capability of bodily health arose both in terms of existing health conditions being a barrier to managing flooding, and new (physical and mental) health conditions arising from the experience of flooding. New health conditions could be both long or short term, and possibly interact with other health conditions or individual characteristics in unpredictable ways.

The tenet of the capabilities approach, more so than recognition and procedural tenets, demonstrates how different people were affected in different ways. Themes ranging from health and financial concerns to disruption of hobbies or separation from pets came up in the empirical data from the interviews. This raises a question of scalability, and how it might be possible to hold details for individuals' capabilities across a large sample group. What would a national assessment of capabilities and flooding entail and how would this be captured? Further, as demonstrated above, some

capabilities were better represented than others. Should the framework attempt to contrast and compare which capabilities are 'most important', or whether it serves to provide an overview of how capabilities are impacted in general.

Comparing the empirical data with the climate justice framework, it is rarely clear whether residents' not feeling supported relates to a lack of recognition, limited procedural justice or issues related to capabilities, as in some cases it could result from either. For example, participants who did not hear anything from organisations and felt unsupported, such as Ian, may have been omitted due to issues of procedure (they were recognised as having needs, but the interactions were poorly executed). An alternative explanation could relate to whether the substantive support which they needed to fulfil their capabilities was (or should have been) forthcoming.

Finally, this subsection has highlighted how the capabilities approach has overlaps both within the list of capabilities, and with other tenets. The interactions are numerous, but some examples include capabilities-capabilities links between bodily health and emotions, and capabilities-other tenets links, between practical reason and procedural justice. The discussion below will consider the implications of these links.

6.2.5. Discussion

This final subsection will draw together the discussions within the section in order to investigate whether the climate justice framework can be considered to capture the kinds of concerns and issues raised by participants in the empirical data. It will also consider interaction among the tenets, in particular; if there is significant overlap between tenets, what is the function of each tenet.

The discussion within justice as recognition highlighted how residents are generally recognised as affected, but not as holders of knowledge. Furthermore, it was demonstrated how recognition is a political process which is shaped by gatekeepers, in the case of flood governance this relates to flood governance actors and RMAs and is structured by the resources and affordances of flood governance. An implication for this in the climate justice framework is that recognition becomes complex to identify, and actions of recognising in one instance may be undone elsewhere.

Procedural aspects included communication, decision-making, approaches to learning, and access to information - many, if not all, points relating to interactions with flood governance actors had (potential) procedural concerns. However, causes of interactional challenges were often not clear. In many cases, there was a possibility that a particular outcome, such as not feeling heard, could have been related to recognitive or procedural concerns. Furthermore, the lack of clarity in certain examples suggest that transparency could be improved.

Evidence speaking to the capabilities tenet of the climate justice framework was largely obtained from interviewees' experiences of flooding. The data on experiences of flooding was more capabilities heavy, which was expected since the data related to impacts on residents. The data revealed that participants all had different experiences, with some more different than others. I was surprised the extent to which the flood governance actors' personal views seemed important to considerations of climate justice. As workers within a broader umbrella of climate adaptation, they are also affected by flooding and the climate justice framework could be developed to more explicitly take that into account.

It is apparent that considerations of epistemic justice, which positions residents as 'knowers' through their experiences of flooding, are closely related to both recognitive and procedural justices. Despite the overlaps, epistemic justice has a unique contribution to the climate justice framework which ensures residents are seen as knowers. Without this, recognition and procedural may include people due to them being affected, but not necessarily include them as experts in their own experiences.

In general, the climate justice framework seems to have significant overlaps across all tenets: recognitive, procedural, capabilities, and epistemic aspects of the framework. However, each tenet is considered to offer a unique perspective, as the above sections have outlined, thus the presence of the tenets could be seen as a range of lenses to consider, rather than aspects which much all be considered. Identifying injustices cross-cutting tenets could be a way to reorganise the framework.

There is also a broader consideration relating to the purpose and application of climate justice. That is, whether the framework should aim to hold and present many individual experiences of flooding, or whether it seeks to present a vast array of data in order to indicate general trends. A potential issue with the former is that flooding affects many people and presenting individual cases would be both time-consuming and potentially too detailed. A potential issue with the latter is that, while general trends may be useful, the purpose of the capabilities is to capture the numerous impacts on wellbeing, and just because only a few people are impacted in one way it does not make those impacts less disruptive.

The discussion in this chapter has revealed that different tenets of the tentative framework of climate justice are weighted towards different components of flooding and flood governance. For example, many key questions within justice as recognition and procedural justice relate directly to flood governance and omit the potential for experiences of flooding to relate. In contrast, the tenets of epistemic justice and the capabilities approach lend themselves more to considerations of the

experiences of people affected by flooding. That there are different focuses of each tenet raises critical questions regarding who will use the framework and for what purposes?

Relatedly, there are methodological implications for applying the framework. As has been illustrated, flooding can be disruptive over a long time. Thus, it is worth considering whether people who sustain significant (material, emotional, or other) impacts as a result of flooding may have the capacity to contribute to recognition and procedural explorations. This is because disruption to health, housing, or family life may result in a lack of capacity to contribute. It has been suggested that the climate justice framework is flexible and there is a potential for it to be widely used. However, without more understanding of this, there is a risk that the framework incorrectly universalises certain aspects of climate justice. For example, people in a different area may have different ideas or desires about what flood governance should happen in their areas.

The discussion above highlighted that there are aspects of interactions which are external to the climate justice framework but may still affect flood governance. Other than respecting people as knowers and including them in discussions, 'just' ideas of interpersonal dynamics are not covered by the elements of the theoretical climate justice framework. Neither are broader ideas about social and political landscapes, although residents use these to understand the flood governance affecting them. An awareness of external factors relating to flooding, for example other climate risks (e.g. drought) or political risks (e.g. housing development) may be a useful addition to the climate justice framework.

Aspects of climate injustice range across a scale of simple to complex. A simple example is that national flood governance policy could work to address some of the lack of clarity relating to responsibility and a complex example is the broad issue of how to demonstrate recognition for unrecognised individuals who have not, or cannot, voice their own perspective.

This section has explored the parallels between participants in Rochdale Borough and the four tenets of justice. It has shown that tenets of justice broadly offer potential for capturing and representing the concerns relating to experiences of flooding for residents in Rochdale Borough. It has also highlighted how the concerns of flood governance actors in Rochdale Borough can be considered by the framework, an unexpected finding which illustrates how people working in flood governance can be affected by flooding as well. Having established that climate justice offers the potential for a new understanding of flooding, the next section will turn to possibilities for employing the climate justice framework in England.

6.3 Operationalising the theoretical climate justice framework for investigating flooding in England

The previous section established that the theoretical climate justice framework (broadly) reflects the concerns of residents. Thus, this section considers how the framework might be applied to flooding in England more broadly, highlighting strengths of the framework and offering some additional considerations which may improve how it can be operationalised.

6.3.1. Strengths of the climate justice framework

As stated in the thesis introduction, climate justice is broadly concerned with working together across different knowledges in order to investigate climate change as a political, ethical, intersectional, and interconnected issue. The theoretical climate justice framework was focused in particular on addressing climate adaptation in England, in particular engaging with work on climate justice by Jafry, Helwig and Mikulewicz (2018a) who identified key themes within work by climate justice scholars. The rest of this subsection will demonstrate how the tentative application of climate justice above addresses the four following themes: "a vision to dissolve and alleviate the unequal burdens created by climate change; a commitment to address the disproportionate burden of the climate crisis on the poor and marginalised; the recognition that the most vulnerable are the most deserving; and a way to encapsulate the equity aspects of climate change" (Jafry, Helwig and Mikulewicz, 2018a).

A vision to dissolve and alleviate the unequal burdens created by climate change

A first stage of dissolving and alleviating the unequal burdens created by climate change can be to identify them. While there is rich and insightful work on flood inequalities (e.g. Sayers, Penning-Rowsell and Horritt, 2018), as discussed in chapter 3, the emphasis is on the extent of inequality rather than detail. The capabilities approach presented how it can take account of the various impacts of flooding, over an extended period. This tenet offers the potential to identify the nature of burdens arising from flooding in England and depending on the scale of operationalisation of the climate justice framework, it could offer both detailed individual accounts of the impacts of flooding, and general trends across populations, flooding 'types', or locations. The combination of the other tenets contributes to shaping a vision of climate justice which is people-centred, collective, collaborative, and accountable.

A commitment to address the disproportionate burden of the climate crisis on the poor and marginalised

The theme above investigates what the disproportionate burdens of flooding are and highlights how the combination of tenets contributes to a vision. In addition, this theme highlights not only that there is an awareness of the burdens but also a strategy for addressing the inequality and

redistributing the harms. The commitment to address the disproportionate burden of flooding in England arises within the tenets of justice that identify where there are barriers or challenges. For example, in the procedural tenet, it was clear that residents found it challenging to access support or information from flood governance actors. While the cause of this is not clear, it may be due to structural challenges on partnership working or other factors, the key concern of climate justice is that this outcome changes. Furthermore, the climate justice framework seeks to address the disproportionate burdens through ideas shaped by the most affected. While this is a strength of the climate justice approach, there is also a requirement for this kind of collective deliberation on the form and processes of climate adaptation, specifically addressing flooding, to be properly resourced and funded.

The recognition that the most vulnerable are the most deserving

While the tenet of capabilities establishes that the most vulnerable are most deserving due to experiencing the greatest burdens, the tenet of epistemic justice further contributes to this. As suggested in chapter 2, and evidenced in the discussion above, a consideration of epistemic justice should underpin the notion of a climate justice-focused investigation of flooding in England. The tenet of epistemic justice highlights how the most vulnerable are not only the most deserving, but also the most informed about what it is like to live with the impacts of flooding in England. Accounts of experiential knowledge relating to experiences of flooding offer a rich new contribution to the mainly scientific knowledges that dominate flood governance. While it is a simple claim to make, that the most vulnerable to climate change are the most deserving, it is much more complex to translate into practice. If the most vulnerable are not deemed to be epistemic knowers, consistently invisibilised through processes of non-recognition, and excluded from democratic processes, how is it possible to identify them? In this framing, the tenet of recognition addresses some of these challenges through the potential to seek out potentially excluded populations of protected characteristics. However, it is not possible to know when the most vulnerable have all been considered, which is where it becomes important to revisit Tschakert *et al*. and "to bear witness to unseen experiences and make space for otherwise silenced voices" (2021, p. 7). This should be necessarily iterative, but could be practiced in flood governance by taking time to build trust and relationships with people who are known to be affected, and maintain open (and meaningful) channels of communication for others to present themselves.

6.3.2. Potential amendments to the climate justice framework

While the climate justice framework broadly reflects the kinds of concerns and needs of residents in Rochdale Borough, the discussion in the previous section has highlighted some areas for improvement. Climate justice is a necessarily flexible concept which should emerge, evolve, and

iterate as required by and for the people who are using it. This subsection discusses possible evolutions of climate justice for investigating flooding in England, namely conceptualising flooding and the language of climate justice.

Plural conceptualisations of flooding

I return to a discussion of conceptualising climate impacts first presented in chapter 3. The study of adaptation in Nepal by Forsyth and McDermott highlighted how "there is also a need to consider how unquestioned scientific explanations can also exclude or organize these voices when they are used as fixed circumstances of justice" (2022, p. 5). When considered in the context of flooding in England, this highlights how scientific definitions of flooding can shape policy and omit the other experiences or definitions of flooding. For example, the consideration of flooding as something which only relates the water being 'out of place' suggests that flooding is over when the water is back 'in place'. However, this definition of flooding is underpinned by several assumptions. First, the assumption that water has 'a place' is an anthropocentric position suggesting that there is an objective order of the physical world, rather than recognising how flows of water are shaped by human activity, and have been changed and shaped over time, both 'naturally' and by humans. Secondly, the definition assumes that water can be visibly in place or out of place, rather than occupying a range of states in between. As participants explained, water can seep into furniture and floorboards whereby latent damage can appear over time. This can go beyond even the concept of flooding to consider the concept of 'wetness' (Mathur and da Cunha, 2020) Thirdly, the combination of the two previous assumptions can position flooding as an event, sometimes referred to as a 'natural hazard' which arrives 'out of the blue' and is cleared up before returning to normal. The empirical accounts of flooding showed how this mainstream definition of flooding does not represent participants' experiences. In contrast, some participants talked about how flooding was the start of a significant shift in their way of life. The implications of this for the climate justice framework is that the nature of the risk, in this case flooding, should be approached as an emergent concept shaped by the people (or beings) who are likely to be affected by it. This does not necessarily mean claiming that the mainstream definition is 'wrong', but rather recognising that there are multiple interpretations of flooding.

Overcoming hermeneutical injustice

Similarly, I want to highlight the technical nature of the language used to develop the theoretical climate justice framework. While interviewing participants, I noted in my fieldwork diary the gap between the language of flooding experiences and that of climate justice. The technical philosophical language is useful for exploring the nuances of justice, but from discussions during my

fieldwork, it may present as a barrier for the application of the climate justice framework, for example discussions of 'epistemic justice' may alienate people. Even the term 'justice' has connotations of the criminal justice system which may serve unhelpful when trying to navigate issues of climate justice. In this way, the theoretical climate justice framework could be considered to represent a hermeneutic injustice whereby the epistemic subjects cannot engage with the climate justice due to the exclusive terminology.

In order to overcome this injustice, a practical development of the climate justice framework may involve identifying certain themes and rewording the framework around them, such as inclusion and support which have recurred throughout the tenets. Taking heed from the development of 'co-ordinates' (Tschakert *et al.*, 2021) and 'directions' (Newell *et al.*, 2021) of climate justice, reorganising the climate justice framework according to recurrent themes may provide a way to translate away the technical presentation of climate justice.

6.4 Conclusion

This chapter sought to address RQ2, 'To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?' It investigated the empirical data alongside the tenets of justice within the theoretical climate justice framework to reflect upon the extent to which the climate justice framework reflects the concerns of residents. It demonstrated that in general, the theoretical climate justice framework contains relevant themes to those that participants brought up.

Additional considerations, including an appreciation of the impact of flooding on flood governance actors, importance of conceptualisation of flooding, and development of an alternative language for climate justice have been proposed. The process of reflexively applying the framework revealed questions about who is applying it and in what context. It highlighted that the procedural and recognition tenets are weighted towards considerations of flood governance, whereas epistemic justice and the capabilities approach capture the impacts on individuals. Combined, findings across the tenets potentially reveal a nuanced landscape of climate justice and flooding. However, there may also be barriers and boundaries relating to the methodology of applying the framework. The chapter provides confirmation of the workable theoretical foundation of the climate justice framework, which justifies the application of the framework to flood governance policy in the next chapter.

Chapter 7 | How climate-just is English flood policy?

7.1 Introduction

Chapter 5 investigated the extent to which the theoretical climate justice framework aligns with experiences of people affected by flooding, including both residents and flood governance actors. Through a reflexive application of the climate justice framework, chapter 6 concluded that the framework is broadly aligned with the priorities and interests of people affected by flooding and working in flood risk management.

This chapter takes a different direction to the previous two chapters, and seeks to address RQ3, 'How climate-just is English flood policy?' Having established the climate justice framework as capturing the kinds of things that both residents and flood governance actors are concerned with, this chapter employs the climate justice framework as an analytical tool to investigate flood governance policy documents. This chapter focuses on two key flood governance policy documents that were active at the time that many of my participants experienced flooding: the National FCERM 2011 and Rochdale Borough Council's Flood Risk Management Strategy 2014 (abbreviated to FCERM and FRMS in what follows). Where appropriate, there are occasional references to a more recent FCERM strategy, published in 2020, and I also draw on related policy documents to elaborate on some arguments.

An overview of the documents was provided in Section 3.3.1, and the justification for focusing on these two documents, as most relevant for the experiences of my participants, was made in more detail in Section 4.6.2. The context of policy production is relevant to analysis and differs from interviews as it was not generated by the researcher. As previously discussed (chapter 3), during the development of policy, each document is drafted and redrafted, bearing in mind the ultimate purpose of the publication as a public, governmental document open to public scrutiny. The drafting and redrafting stages were likely performed by multiple different authors, writing on behalf of government departments or positions. Who those authors are, and the split of writing is not explicitly stated. Rather than portraying a particular individual, or set of individuals, voices, policy documents can be considered to reflect mainstream political opinions from the time.

While policy documents are open to public scrutiny, due to their length and technical language they are unlikely to be widely read by members of the public. Rather, the documents may serve as arguments that can be drawn upon to support policy positions or cases for funding. Rather, the documents are more likely to serve the purpose of formally marking the (new or updated) governmental position on flood risk at the time. For this reason, FCERM and FRMS can provide a

contextualisation illustrating governmental discourses of flood risk in the UK at the time of publication and facilitate the possibility of tracking change over time (Bowen, 2009).

It is worth heeding that the documents should not be "given elevated status simply by being the focus of research" (Sharp and Richardson, 2001, p. 17) and can provide only a limited insight. These documents were the central governance documents in place at the time of flooding for the majority of my participants. However, these documents influence, and are influenced by, numerous other national and regional policy documents on a range of topics, such as community engagement, investment, and partnership practices. Furthermore, analysis of what these documents *claim* to do is distinct from what *actually* happens in practice, since policy is delivered by a range of authorities, organisations, and individuals who will have different interpretations. Thus, these documents provide a useful starting point from which to trial the application of the climate justice framework but reveal only a partial view of flood governance in their active years.

This chapter is structured with four sections aligning with tenets of the climate justice framework: justice as recognition (Section 7.2), procedural justice (Section 7.3), the capabilities theory (Section 7.4), and epistemic justice (Section 7.5). Although it has been positioned as the first tenet throughout the rest of this thesis, I turn last to reflections regarding epistemic justice. As mentioned (p. 92), the policy document analysis was undertaken before epistemic justice was part of framework, which consequently exposed the importance of epistemic justice. Thus, I use the findings of the other three tenets to offer reflections of epistemic justice and policy document analysis. Considerations of scale are discussed throughout each of the tenets as appropriate. The chapter concludes with reflections on the extent to which the policy documents considered here, and flood governance more broadly, incorporate themes of climate justice.

7.2 Justice as Recognition in flood governance policy documents

7.2.1. Overview of justice as recognition

Earlier in the thesis, I introduced Justice as Recognition (from now on, referred to as recognition), as a central tenet of climate justice. In the context of flood governance policy documents, recognition requires consideration of who and what is given preference, and thus considered important, within the FCERM and FRMS. Surfacing what, and who, is (or is not) privileged through flood governance provides a base from which to make claims about what is or is not 'just' within the documents, relating to recognition.

The guiding questions for this section, and which structure the subsequent subsections, were:

- Who and what is recognised within the documents? What are the priorities of the policy documents?

- Is there recognition of a) diversity across people, and b) differing impacts and vulnerability(ies) among people?
- Is there recognition of the experiential knowledge which people generate through being affected by flooding?

Having explored how recognition presents within the documents, this section then presents a discussion of how recognition of the public has evolved in flood governance policy documents since 2004.

7.2.2. Who and what is recognised in the documents?

As discussed above, recognition is concerned with understanding what the policy documents place importance on, in order to understand who or what is privileged through and by the document content. As I will demonstrate, the overarching paradigm in FCERM can be understood to be one of risk management. This is evident in the title – 'Understanding the *risks*' and in the definition of flood risk as:

> "Managing flood risk and coastal erosion involves:
> • knowing when and where flooding and coastal erosion are likely to happen;
> • taking reasonable steps to reduce the likelihood of them happening;
> • forecasting and providing warnings of floods so that people, businesses, infrastructure providers and public services can take effective action to minimise the consequences of floods, and
> • adapting to coastal change and acting to reduce the risk to life, damage and disruption caused by flooding" (p. 2, FCERM)

The emphasis on location and likelihood of a flood occurring suggests that it this aspect of the flood that is of primary concern and makes no reference to flooding impacts as connected to weather events as well as location and socio-cultural factors. Despite referencing risk to life, this definition of flooding is not person-centred. Consider how an inundation of water in a floodplain would require a much different (or none at all) response to an inundation of water in a housing estate or critical infrastructure, such as a school or hospital. Through the emphasis on prediction, likelihood and forecasting, the excerpt illustrates an approach which, although acknowledging impacts on people, can be considered to be centred around flooding, rather than the consequences thereof. The FRMS policy document has some similar characteristics - the section below demonstrates an emphasis on the conceptualisation of risk as technical and clearly delineated, but also demonstrates an appreciation for the situated nature of flooding:

> "The cause and effects of flooding can be geographically separate and understanding risk and developing measures to manage and reduce flood risk

> may require a more strategic catchment scale approach to their planning, funding and delivery" (FRMS, p. 25)

As outlined in a previous chapter, risk management replaced a defence approach to flood governance in the early 2000's, and to some degree it represented a positive improvement to flood governance. Although, as noted in chapter 3, many flood governance approaches remain dominated by scientific and technical paradigms. While 'empowering communities' is part of the title, the definitions of flooding within FCERM and FRMS given above have a notable absence of an overarching commitment to experiences of, and implications for, the many people affected by flooding. The conceptualisation of flooding as an event within the policy documents will be investigated in a later section of this chapter.

Given the evidence, the overarching approach to flood governance in both documents is based on a heavily technical conceptualisation of risk. This framing omits a nuanced recognition of the various ways people are affected and their potential epistemic contributions, because the conceptualisation of focuses on the risk of water inundation significantly more than the consequences. However, an alternative position may argue that the inclusion of the public is a significant improvement from the previous policy,

> "aim to better protect more communities, deliver more benefits, and help avoid deprivation caused by flooding and coastal erosion" (FCERM, p. 36)

The analysis here recognises that the documents also highlight that flooding can cause deprivation and demonstrates how the public is considered as requiring support, but the risk management paradigm displaces such considerations through privileging technical approaches. Returning to the question of 'who or what is recognised?', while there is evidence of considering the impact of flooding on people, the overarching narrative is on the likelihood of the flood event.

7.2.3. Recognising people in flood governance

This subsection investigates which people are considered, and how, within the policy documents. It addresses the question 'Is there recognition of a) diversity within people, and b) differing impacts and vulnerability(ies) among people Is there recognition of a) diversity across people, and b) differing impacts and vulnerability(ies) among people?'. Below, a speculative idea of what 'good' recognition might constitute in the documents is presented. Then the subsection addresses the question by focusing first on a) diversity among people and then b) differing impacts and vulnerability(ies) among people.

Evidence of a recognition approach might look like conceptualising the public as a heterogeneous and dynamic group, sharing only that they can be considered 'lay people' in a given context. Linking this conceptualisation with the latter part of the question above might reflect an understanding that, although flood risk varies within and across areas, people will be affected by floodwater in different ways. The effects may include, homes being flooded, social networks affected, critical infrastructure disrupted, recreational activities inaccessible, businesses having to close, and longer-term implications on thoughts about the area). In addition, recognition would consider how people have varying capacities, for many reasons including income, caring responsibilities, health, and accessibility. Therefore, the same disruption is likely to incur different impacts for different people. While the technical risk management discussed above may successfully identify the risk of flooding in differently locations, there is no evidence of the range of ways that people can be affected, or an understanding of which areas are especially vulnerable. Given how the FCERM and FRMS arose directly from the Pitt review which encouraged more consideration of the effects of flooding, it would be fair to expect these documents to explicitly embrace a more multi-dimensional view of risk.

Recognition of a diversity of people in flood policy documents

Word frequency analysis was undertaken to ascertain the diversity of terms used to refer to the public in the documents, which is presented in Table 7-1. Both documents were searched for the frequency of each term. Where there is an asterisk, it was to allow the search to pick up on the singular (e.g. community) and the plural (e.g. communities). "The public" was used to distinguish from where public is used as an adjective (e.g. publicly available, public spaces).

The most common term is communit* across both documents and was almost 10 times more common that each of the other terms. In some instances, the term 'individuals and communities' was used. When groups were mentioned, it often related to flood action groups, or occasionally FRMS working groups. "The public" was relatively infrequently used, and usually in a general advice for a national context e.g. "flood warnings are issued in good time so that individuals, businesses, the public and the emergency services" (FCERM, 2011, p. 27). Finally, household* was not used at all in the FRMS document and relatively rarely in the FCERM document. The use mainly relates to actions that 'householders' can take to protect and prepare their property from flooding.

Table 7-1 Frequency of terms relating to 'the public' in policy documents

Term	FCERM 2011	FRMS 2014
"Communit*"	102	114
"Individual*"	18	5
"Groups"	15	8
"The public"	7	1
"Household*"	6	0

"Businesses"	12	23

Yet specific definitions, or clarification on the differences between the terms, are not explicitly given within the document. Although terms are used in different contexts, there remains a result in a lack of clarity regarding the meaning of the documents. More broadly, understanding the context of the terms provides some insight as to the conceptualisation of people within the policy document,

> "Communities, individuals, voluntary groups and private and public sector organisations" (FCERM, p. 13)

The terms above are used in a context introducing the strategic aims of the policy, and thus captures a wide range of actors who are anticipated to feed into the strategy in some way. While it reflects multiple groups, there is no evidence here or elsewhere, of each group being constituted by a spectrum of people with wide-ranging needs. In contrast, the terms,

> "Householders and businesses at flood risk" (FCERM, p. 26)

refer to a specific goal of building public awareness and refers specifically to property-level protection actions.

A section of the policy relating to the (then) new introduction of capital allocation, which sought to,

> "better protect more communities, deliver more benefits, and help avoid deprivation caused by flooding and coastal erosion" (FCERM, p. 36)

This recognises that flooding causes deprivation. However, the statement is in tension with another on the same page, relating to,

> "Those that live or have an interest in the areas at risk should have a bigger say in what gets done, in return for greater local and private contributions towards the benefits delivered" (FCERM, p. 36)

While one statement acknowledges the production of deprivation, the same deprived group are expected to provide capital in the second. From a recognition perspective, this tension represents a compound injustice because it attributes the cost for rebalancing an inequality resulting from the policy to the people who have been exposed to the flood risk. The difference between the statements is interesting, and unknowable from this analysis. It poses questions such as, is the first statement (p. 26) what the government thinks that the later statement (p. 36) means? I.e., that only householders

and businesses have an interest in the risk. The motivation behind the use of each term is not clear and thus not possible to answer in more detail using this framework.

The use of different terms suggests that the FCERM document recognises that people may have different characteristics and provides evidence to demonstrate conceptualisations of the public which has some plurality. The range of terms also demonstrates an awareness for how different groups of people may relate to the policy, for example in the different activities of shaping policy, directly managing risk, or contributing funds to flood governance interventions.

Recognition of a diversity of needs of people in flood policy documents

Next, to address the question of whether different needs are recognised within the groups mentioned requires how the different groups are mentioned. There is some evidence of consideration for vulnerabilities within particular groups of people:

> "Defra will co-ordinate a group to review how users of caravan and camp sites can be better prepared to cope with flood risk. These sites are often vulnerable and risk to life is potentially more significant than in other areas that may be at risk." (FCERM, p. 28)

While the above excerpt demonstrates an understanding of vulnerability as a characteristic that some people may experience, the emphasis on the *sites* as vulnerable, rather than the '*users*' suggests a conceptualisation on vulnerability that is attached to place rather than, or possibly in addition to, people. Later in FCERM, the document aspires to increase protection,

> "the reforms aim to better protect more communities, deliver more benefits, and help avoid deprivation caused by flooding and coastal erosion" (FCERM, p. 36)

The excerpt does not go into detail naming any specific communities and their possible needs but does demonstrate an awareness that some communities require more protection and gives some indication that this is a priority.

The FRMS document demonstrates more detail regarding how communities are constituted of different and diverse people who deserve different engagement approaches depending on their needs. The executive summary states that a guiding principle of their flood risk management approach is to deliver,

> "sustainable solutions which meet the needs of all communities at risk of flooding including the most vulnerable members of our communities" (FRMS, p. iii)

Unlike the FCERM, which addresses different 'groups' in turn, the FRMS demonstrates pluralism within their reference to communities. Later on, in a section on 'Widening ownership and awareness of flood risk management in affected communities', the FRMS highlights the range of approaches required to address the many people who may be affected,

> "It is important to understand that communities are diverse and one approach alone will not always be sufficient. The message should be one that everyone can understand on their own terms and one which gets to more vulnerable or harder to reach members of the community due to age, mobility or language" (FRMS, p. 39)

The excerpts from the FRMS highlight an awareness of different characteristics which may result in vulnerabilities, such as age and language, as well as systemic patterns, such as the link between flood risk and indices of deprivation. In this way, the FRMS provides a higher granularity of who is considered under the umbrella of 'the public', than the FCERM. However, neither document acknowledges diversity or vulnerability beyond external and 'measurable' characteristics (such as age, gender, ability). A recognition approach might seek to extend vulnerability to include more dynamic, less tangible considerations such as housing precarity, mental health, relationship dynamics, and other experiences which arose in chapter 5 as affecting my participants' capacity to cope with flood impacts.

Both documents consider people, overwhelmingly through the terminology of "communit*" (Table 7-1), and the FCERM document is more simplistic than the FRMS. The FCERM is simplistic in the sense that the conceptualisation is of a homogeneous public, with exceptions made for specific vulnerable groups, and that the public is characterised as being resident or householders – both of which are terms which exclude many people. There is also a hint of a basic prioritisation of people as either residents or business/private sector (who may or may not be resident), so an economic definition underpins the basic aspect of recognition. This is exclusionary, since it omits considerations regarding how people may use a space, or have an interest in it, through using it in other ways such as service users, leisure, and having emotional attachment. The FRMS goes further in conceptualising the public, since it demonstrates awareness that different characteristics may affect abilities to engage with, respond to, and cope with flooding impacts. The FRMS has a sensitivity to different characteristics of vulnerability, and that these may emerge throughout the borough in unpredictable ways which require dynamic and flexible engagement and planning.

7.2.4. Recognising the value of experiential knowledge

This subsection is concerned with the extent to which the documents acknowledge flood experiences as relevant to, and valuable for, flood governance, addressing the final question, 'Is there recognition of the experiential knowledge which people generate through being affected by flooding?'. As previous chapters have demonstrated, flood-impacted people hold insights and knowledge which is developed through the experience of being flooded. Recognising and involving this experiential knowledge could offer RMAs better understanding about the impacts of flooding and thus opportunities to co-develop supportive measures to address them. This is not to say that the (traditionally) 'expert' technical knowledge does not remain a vital part of flood governance, but that it cannot provide all the relevant information.

This subsection will first illustrate the (relatively sparse) examples where policy documents value people and their potential influence, before highlighting how the majority of references to people and their knowledge frames them as 'needing help' or re-engagement.

In places, FCERM acknowledges the ability of people to contribute valuable insights. In the foreword, Richard Benyon emphasises this through the language of 'rights',

> "Our communities deserve greater licence to inform and indeed influence long-term approaches" (FCERM, p. i)

While Benyon hints at justice language through the idea of what communities 'deserve', exactly *why* communities are deserving is are unclear. For example, a greater license to inform and influence could relate to their valuable experiential knowledge, but it could also be because they are the ones who are affected. However, later in the document there is evidence that RMAs would benefit from understanding peoples' experiences, as below,

> "There are many other bodies that play an important role in FCERM … Local partnerships, forums and community groups also provide valuable local knowledge and insight as well as a focus for involving local people" (FCERM, p. 33)

While both quotes demonstrate evidence for potential dialogues between RMA's and the public, and thus suggest RMAs listening to people, details about the purpose of the experiential knowledge are absent. Notably, there is an absence of discussion relating to power dynamics when handling and navigating local knowledge and related decision-making processes.

In contrast, other parts of FCERM are more suggestive of the public as comprised of passive actors who need to be engaged and educated rather than the autonomous contributors discussed above. For example, also in the foreword, communities are positioned as disinterested,

> "if there is one thing we need to achieve in the coming years, it is to re-engage our communities in the risks they face and the choices that affect them" (FCERM, p. i)

In chapter 5, I illustrated how residents can be understood as risk managers engaged in governance, through descriptions of how they undertake daily actions to stay informed about movement of water around their homes and engage with RMAs to manage the risk of being flooded. Such a framing is broadly in line with recognition tenet in climate justice. In contrast, some excerpts within FCERM do not reflect this autonomy and knowledge, especially where 'communities' are homogenised,

> "plans are fundamental in helping communities understand the risks they face, what they can do to manage them and how the risk management authorities and other organisations may help" (FCERM, p. 18)

The phrasing in the above example suggests that FCERM positions the public as passive actors who ought to be engaged and trained as risk managers, in order to deliver risk management according to and outlined by the RMAs. This framing conflicts with a climate justice perspective which would seek to understand people through their own experiences and practices, in order to understand how policy may strengthen existing processes used by people affected.

The FRMS document demonstrates similar commitment to experience as a valuable tool for FRM. The excerpt below illustrates how the FRMS document seeks to employ reports of flood events to improve FRM.

> "Data and key evidence to tell us more about flood risk, why and where it could happen and what its effects could be is constantly improving… Reports from flood events can also provide important intelligence about causes of flooding at particular locations and what can be done to prevent or reduce future risk" (FRMS, p. 39)

However, the use of reports potentially removes the public from directly contributing to policy, because their experiences are ultimately shared through gatekeepers. While this is only one example, it demonstrates a general lack of specificity throughout the document to details regarding who can share experiences of flooding and how.

More common throughout FRMS are examples which echo the FCERM's conceptualisation of the public as passive. The conceptualisation is also slightly paternalistic, in that public involvement is expected in particular ways, such as to

> "Help people, communities and businesses to take greater ownership of flood risk where they can manage and where possible reduce their risk and be better prepared to respond to and recover from flood events" (FRMS, p. ii)

A more generous interpretation of both policy documents is that it may be realistic that some people who have not been flooded before are unaware of flood risk, especially given climate change projections and the rate of urbanisation discussed earlier in the thesis,

> "It is important to make people more aware of their flood risk and its meaning for them i.e. their property and community and their lives" (FRMS, p. 38)

However, the broad assumptions put forward that people need to be *helped* or *engaged* on topics relating to their own flood risk is suggestive of a power dynamic whereby RMAs always have the entire 'solution' or response to flood governance. This contracts with a position aligned with recognition as understood in climate justice, which may, for example, seek co-developed approaches to flood governance using RMA's expert knowledge of weather, flood models, and government processes, *alongside* the experiential knowledges of the public.

Thus, in addressing the question - *Is there recognition of the value of experiential knowledge for FRM?* - this subsection has found the following. While there is (little) evidence ('communities') as 'deserving' of influence and having 'valuable knowledge', these statements are outnumbered by ones which characterise communities as needing 'help' or 'to reengage'. This is not to say that members of the public do not need help and support, or that all of them will always be engaged. However, the relatively few comments referring to what flood governance can learn from members of the public suggests that policy documents consider it a unidirectional knowledge transfer.

7.2.5. Recognition of people across flood governance policies

Characterisation and inclusion of the public has evolved across different flood governance policies over time. So far, this section has demonstrated that there is room for increasing the recognition without flood governance policy, but it is promising to reflect back on the developments in flood policy since Making Space for Water (MSfW) in 2004, to FCERM 2011, and briefly considering the most recent FCERM 2020.

The two overall aims of MSfW, outlined in the Executive Summary, were to:

> "reduce the threat to people and their property [and] deliver the greatest environmental, social and economic benefit" (MSfW, Executive Summary)

Although the first aim centres people as important to the policy (by mentioning it first), it becomes evident in the document that more often than not (6/9 occasions), people are mentioned in the same phrase as their property. Overall, references to 'property/ies' in the document are almost triple that of references to 'people'[10]. Additionally, in the contents, chapters relating to property and technical matter such as '3. Risk issues' and '4. Land-use planning' are positioned at the beginning, whereas '8. Living with the changing coast' and '9. Living with flood risk' are at the end of the document. This relative prioritisation positions 'people' as of less importance than 'property' in MSfW.

The use of the world people alongside propert/ies indicates a homogenisation of people understood as predominantly asset owners within MSfW. Other social groups referred to are the general public, stakeholders, consultees and customers. Clarification as to who would be part of these groups is not offered, potentially leading to misunderstandings of these terms by different readers. This could be understood as a manifestation of an objective approach, which assumes that 'people' or the 'public' are a fixed and defined concepts for which everyone has the same understanding (and ignores overlaps, since there is no accounting for a stakeholder simultaneously being a member of the public).

The FCERM 2011 document analysed in this chapter demonstrates development from the MSfW position of 'people and property' to partnership with communities. Although there is no discussion of who constitutes communities or what their needs might entail, there are a range of presentations of what partnership looks like and includes giving communities 'a bigger say'. However, while the sentiment of including members of the public has increased, there is no detail elsewhere in the policy that provides more detail on how this might be achieved.

> "The risk management authorities should work in partnership with communities to understand the community perspective of flooding and coastal erosion, help communities understand and actively prepare for the risks, and encourage them to have direct involvement in decision-making and risk management actions. This includes giving communities a bigger say in what action is taken, greater responsibility for managing their own risks and decisions on local funding

[10] Recognising that synonyms such as public, community, and individual could also be used to refer to 'people', but the use of those other terms are either not relevant e.g. public services, community partnerships or few in number.

> priorities, and as a result greater accountability for the level of safety and protection achieved and the way in which the risks are managed" (FCERM 2011, p. 14)

The 2020 FCERM strategy distinguishes between people in greater detail, stating that,

> "This Strategy will not be effectively delivered by risk management authorities working on their own …We need individuals, communities, the third sector, businesses, farmers, land managers and infrastructure providers to contribute to planning and adapting to future flooding and coastal change" (Environment Agency, 2020, p. 10)

The more recent policy highlights a 'need' for contribution, whereas the earlier document positions RMA's more as gatekeepers who 'work in partnership' and 'help' communities. In some ways, the more recent document recognises the same 'need' to include people as climate justice. This is evidenced where FCERM 2020 demonstrates a greater level of nuance regarding how different groups of people may be more vulnerable to impacts of flooding,

> "Children are especially badly affected during and after floods. They lose their homes, friendship networks and familiar surroundings. They also see adults under great strain and witness the exceptional and long-term anxieties flooding brings" (FCERM, 2020, p. 104)

However, an alternative reading may contest that, where climate justice has a focus on those most affected by climate impacts, FCERM 2020 seeks to include people to delegate responsibility rather than being motivated by justice. This is supported by research commissioned by the Environment Agency which suggests that inequality is still evident, despite investment tools which attempted to rebalance it.

> "There is an inequality in terms of social deprivation and flood risk exposure from all sources of flooding. In other words, people from areas that are classed as more deprived disproportionately face more flood risk than those in less deprived areas. This is the case when taking into account nearby flood defences" (Hall and Bailey, 2020, p. 1)

The observed trend of increased recognition of who is affected is encouraging, but meaningful inclusion of people in flood governance also depends on the implementation. Approaches to participation within the documents will be investigated in the subsequent section on procedural justice.

7.2.6. Summary

The overarching paradigm underpinning the policy documents considered here is that of risk management, which does not lend itself to the consideration and centring of people as demanded by the climate justice framework. Despite this, the policy documents still demonstrate concern for people and give increasing attention to the nuance in how the public is considered. However, it could also be argued that the conceptualisation of people within the documents remains relatively simplistic. Furthermore, and perhaps because of the simplified understanding of the public, there is little evidence recognising the value of experiential knowledge within flood governance. In some places where peoples perspectives are included, this is often through reports that are likely compiled, and thus gatekept to an extent, by RMAs.

7.3 Procedural justice in flood governance policy documents

7.3.1. Overview

Procedural justice is another central tenet of climate justice. A key focus of procedural justice is consideration of how the *process* of flood governance is enacted. In addition to who or what is valued, both policy documents have a role to play in guiding the way that flood governance decisions are made: especially how the 'problem' of flooding is addressed, who is included, and how learning is evidenced.

The guiding questions for the procedural justice analysis were:

- How is the problem of flooding addressed?
- How are people involved in flood governance decision-making?
- How are processes of flood governance developed?
    - How transparent is flood governance decision-making?
    - How is learning incorporated in flood governance decision-making?

This section is structured using the guiding questions in the order above, starting with how flooding is addressed by considering how the framing of flooding influences the possible involvement of members of the public. As will be demonstrated, an overarchingly 'event' approach to flooding influences the ways which people can be involved. The second subsection then considers involvement of people in flood governance decision-making. The final subsection considers the two final guiding questions, addressing transparency and reflexivity in flood governance decision-making.

7.3.2. Framing the problem of flooding

The framing of flooding has an impact on how it is addressed by the policy documents, flood governance more broadly, and the 'stages' when people may be involved. Both policy documents demonstrate a conceptualisation of flooding as an event which is defined by the (sometimes fast onset) flow of water,

> "ensure fast and effective responses to and recovery from flood events when they do occur" (FCERM, p. 2)

The emphasis of flooding as an event could be argued to problematise ongoing flooding as unconnected moments,

> "Our changing climate … will always have the potential to create a flood event whether minor or more severe. Flood events can also occur very quickly and at any time of year such as 'flash' flooding after extreme heavy rainfall" (FRMS, p. 1)

In addition, the event focus comes across as abstract and disconnected from a particular temporal context, since there is no discussion of the effects of season or time of day. The documents do not discuss how flooding can be quick onset but slow to clear up and recover from, or how one weather event may lead to flooding in many different locations, e.g. along a river. However, there is some consideration of future risk throughout the documents, through examples of longer-term planning,

> "if there is no additional development in the areas at risk, by 2035 there will be an additional 350,000 properties… in areas with a 1 in 75 or greater annual chance of being flooded" (FCERM, p. 10)

While treating individual floods as events can be practical for flood risk modelling, there are implications for who gets to decide when a flood event is over. In addition, while the floodwater may be cleared up and no trace left behind, the empirical details from chapter 5 highlighted how some participants (such as Ian) felt that flooding had a beginning but that there has been no end. Furthermore, recent guidance from the Climate Change Committee echoes this critique of the 'eventness' within risk management more broadly, suggesting that events should be linked together to understand cascading risk:

> "The current model of conventional risk governance in the UK, which focuses on single events, single sectors and characterisation of reasonable worst-case scenarios, should be updated to address cascading climate risks" (Climate Change Committee, 2021, p. 22)

The framing of flooding within the policy documents as abstract, and thus disconnected, flood events omits the ability to consider implications of several flood events occurring in quick succession. For example, repeated flooding occurred across England in February 2020, and the nature of the compounding impacts is likely to have shaped the experiences of those affected. A central claim of

climate justice could offer a route to reframe flooding in policy, which was demonstrated in chapter 5, through inclusion and consideration of experiential knowledge.

7.3.3. Involvement of people

This subsection investigates processes relating to the involvement of people within the two policy documents. I start by addressing the 'working in partnership' organisational structures, to understand the collaborative structures within which involvement of people takes place, before reflecting on participation processes.

A key development between 'Making Space for Water' (2004), the previous national policy document to FCERM, and the FCERM policy document is an emphasis on partnership working between RMAs to achieve FRM. The emphasis on partnership was introduced alongside greater clarity on the roles and responsibilities of RMAs, resulting from the advice of the Pitt Review. Throughout both policy documents, reference to partnership working commonly emphasises 'working together',

> "The Council will work with other flood risk management authorities including the Environment Agency and United Utilities and with other partners and stakeholders" (FRMS, p. ii)

Chapter 5 highlighted some key partnership working challenges raised by actors who work within RMAs, such as different institutional priorities, varying levels of access to capital, and interpersonal relationships. Such challenges highlight the complexities underpinning the seemingly simple claim to 'pool resources' in FRMS,

> "it is essential that the organisations involved at each level in FCERM work together, co-ordinating their activities and pooling resources" (FCERM, p. 29)

Considerations of issues regarding the practicalities of working together in practice are not apparent within either policy document. The Flood and Water Management Act (*Flood and Water Management Act*, 2010) stated the explicit requirement for cooperation between authorities, but it is not clearly defined here. In addition, decision-making processes with clear goals and aspirations involve a complex interplay of power dynamics and can take several stages or iterations, so it is likely that a single 'decision', involving several organisations and members of the public, would comprise of different, perhaps opposing, perspectives.

Partnership working relates to procedural justice, since to deliver public involvement, RMAs must have a clear idea on governance structures and understand where responsibilities are allocated. This includes an awareness of how RMAs will incorporate engaging with 'communities' into that

process. Most excerpts from the policy documents suggest that 'communities' should be empowered to take on a risk management role alongside RMAs, which is exemplified through the below paragraph,

> "Communities, assisted by coastal erosion risk management authorities and lead local flood authorities, should plan for the future and take appropriate steps to adapt to changing flood and coastal erosion risks" (FCERM, p. 26)

In this sense, involvement of people is contingent on people taking on a role that RMAs have outlined on their behalf, rather than being able to contribute or partake in a way that they can shape,

> "over time it is hoped that communities and local land management interests will play a more active part in local flood risk management governance structures through local flood forums and action groups" (FRMS, p. 26)

While evidence of some participation is better than none, prescriptive involvement risks excluding particular groups of people who may not have the time, confidence, or ability to be part of local flood forums and therefore is unlikely to capture hidden voices. This criticism stands in relation to the policy document preference for self-organised flood action groups, which can re-create power dynamics whereby some residents feel more comfortable in such environments than others,

> "Communities living and working in areas of flood risk should be represented within any local flood risk management partnerships that are formed, for example through attendance by members of local flood action groups" (FCERM, p. 14)

As mentioned in the previous section, in places communities are characterised as requiring help or education in order to manage flood risk, which is suggestive of a paternalistic or prescriptive approach. This may further reflect a technical approach emanating from the formal policy actors, rather than a participatory or co-developed one,

> "[The LLFA will]: Create a positive and robust forum for working with risk management authorities where local communities are more empowered and engaged in planning and managing flood risk solutions that affect them; Foster greater participation in local environmental stewardship; and develop an approach which can be used with other communities at risk" (FRMS, p. 51)

The procedural ramifications of an approach which appears to support 'communities' depends on the execution of it; representation and empowerment could be constructive ways to incorporate many perspectives within a discussion. On the other hand, an absence of details explaining how

representation functions and what empowerment means, could also suggest that this process may make assumptions, for example about who needs to be empowered and how, simply reproducing existing power structures.

Neither document provides an overview or guidance outlining decision-making processes or principles which may otherwise elucidate the ability of flood governance participation to meaningfully engage and listen to people. The national policy document suggests that anyone at risk is welcome to contribute to 'what gets done',

> "Those that live or have an interest in the areas at risk should have a bigger say in what gets done, in return for greater local and private contributions towards the benefits delivered" (FCERM, p. 36)

On the face of it, this excerpt is promising. However, the vagueness of the language, such as '*have a bigger say*', could arguably be interpreted in many different ways. In this circumstance, it is worth distinguishing between the local and national policy. The authors of the national policy, Defra and the Environment Agency, are policy bodies without a particular remit for representation. However, local authorities should be able to be much more precise about how this might work and offer details regarding how flood governance representation aligns with other local democratic structures.

Furthermore, neither document refers to the terms or stages of decision making. The national document suggests that 'having a say' is contingent on what the public offer in return, such as the 'local and private contributions'. Taken at face value, this statement is in opposition to climate justice, which centres inclusion due to exposure of climate risks. Rather this statement is more reflective of a general privatisation of flood governance to residents through the imparting of costs.

Additionally, being able to 'have a say' in the type and design of flood governance infrastructure is different from 'having a say' in final touches, such as the colour or planting scheme of an already-decided flood governance infrastructure. Such vagueness in the involvement delivery may result from existing challenges within flood governance; this is suggested within the Environment Agency research published in 2021,

> "In order for this new approach [people and places at the heart of local decision making] to be realised, there needs to be further research to extend and improve participation in FCERM" *(Twigger-Ross et al., 2021, p. 3)*.

Thus, the issues that climate justice highlights in this subsection appear to already be flagged within the RMAs.

Prompted by flooding in 2019 and 2020, Environment Agency research in 2021 investigated "the effectiveness of current FCERM governance and whether it is fit for purpose for the future" (Environment Agency, 2021b, p. 6). The report highlighted lessons learnt relating to improving partnership working, developing trust between actors, building resources and capacity, ensuring accountability, and linking flood governance with wider governance structures. The report concluded that there are "attention should now turn to the practicalities of implementing these lessons, both for improving existing partnerships and forming new ones" (Environment Agency, 2021b, p. 106). This sense of the requirement for ongoing re-evaluation of flood governance demonstrates some reflexivity and aspiration to improve from at least a subset of flood governance actors within a large RMA. This is the focus of the next section.

7.3.4. Developing flood governance processes: transparency and reflexivity in flood governance

Transparency and reflexivity are key aspects of procedural justice and are vital in order to navigate the complex and everchanging nature of flooding. It could be argued that policy documents were produced at least partially as a result of new understandings relating to flood risk, to address something that was not sufficiently considered in the past. In this way, the production of new policy documents may reflect ongoing learning at a large (national or regional) scale, although explicit acknowledgement of this is lacking. On the other hand, the FCERM explicitly states that reviewing progress will underpin the policy,

> "High level national FCERM reporting will be carried out annually and build on existing practices … Reviews of the national strategy will be timed to coincide with one of these six yearly reports" (FCERM, p. 41)

Evidence of learning through reports and reviews is constructive and promising for ongoing improvement of FRM, but since an explicit appreciation for experiential knowledge is absent from the FRMS document it follows that it is absent from the reports.

> "The LLFA will carry out a quarterly review of established work programmes for flood risk management and an annual review of progress against delivering the objectives of the strategy. A full review of the Flood Risk Management Strategy will be carried out through Rochdale Council no later than 5 years after approval" (FRMS, p. 54)

Without investigating the reviews directly, or understanding the methodology for undertaking the reviews, it is not possible to verify this. This observation relates to transparency, as it is not clear whether or how reflexivity is practised, and especially how this might manifest across different scales

(e.g. national policy and regional policy). Reflexivity reflects a commitment to improving flood governance, and full transparency of how reflexivity is practised can improved accountability. For example, without reflexive practices which consider personal accounts of flooding impacts and experiences of flood governance, as well as flood governance actors' experiences of delivering flood governance, it is unlikely flood governance processes will evolve and iterate in line with the needs of those affected, and instead ultimately continue to privilege technical understandings of flood governance. However, an alternative position could argue that the lack of specific details regarding engagement with members of the public is unrequired, because RMA's can draw on additional guidance for the details: for example, the EA has additional guidance on 'Community Engagement on Climate Adaptation' (Environment Agency, 2019). I would dispute this, as I have demonstrated throughout, I think the public, and their experiences, should be central to flood governance.

7.3.5. Summary of procedural justice themes within policy documents

This section has highlighted two key procedural justice themes present in the policy documents. Firstly, flooding is framed primarily as an abstract event. This framing results an approach to flooding which is incapable of either considering the cascading potential of risks to overlap and compound one another or recognising the ongoing impacts of a single experience of flooding for those affected. Secondly, details of the participation processes are difficult to discern from the documents. While the documents outline a commitment to public engagement, specific advice on how to approach it is absent.

7.4 Capabilities in flood governance policy documents

The capabilities approach is another core tenet of climate justice in this thesis and were introduced in chapter 2. As a reminder, the capabilities comprise of: *Life*; *Bodily Health*; *Bodily Integrity*; *Senses, Imagination, and Thought*; *Emotions*; *Practical Reason*; *Affiliation*; *Other Species*; *Play*; *Control over one's Environment*: *Political* and *Material*. The environment, in this case specifically flooding, is considered as an overarching 'meta-capability'. In practice, analysing policy documents for evidence of capabilities can be understood to investigate how the ongoing impacts of flooding on the capabilities in daily life are addressed. Thus, the analytical guiding questions for this section were:

- Are the policy documents concerned with the social impacts of flooding?
- How do the policy documents address the capabilities as experienced in daily life?

7.4.1. Are the policy documents concerned with the social impacts of flooding?

Before addressing the capabilities in turn, this subsection illustrates the extent to which the policy documents consider the social impacts of flooding in general. The ministerial foreword, conventionally

more personal, emotional, and separate from the rest of the report, in the FCERM starts with a strong sentiment on the social impacts of flooding,

> "Flooding and coastal erosion can have a devastating impact on communities. I saw this first-hand in my constituency during the floods of 2007 and we are reminded whenever events unfold" (FCERM, foreword)

However, the rest of the FCERM document says little about how to recognise, support or reduce that devastating impact. In fact, given the mention in the forward, the lack of attention within the document is even more disheartening.

The FRMS document also highlights the link between flooding and impacts on quality of life,

> "Ensure that how we manage and reduce flood risk helps our local communities, economy and environment to be more resilient to climate change impacts" (FRMS, p. iii)

Since these documents have made a shift towards a 'living with flooding' approach, contrasting from the previous policies, it is notable that they give little attention to understanding how flooding can have a 'devastating impact'. Regardless, a climate just argument might hold that the flooding impacts do not have to be as extreme as 'devastating' to warrant action. The FCERM document, demonstrates, see below, that communities and individuals will be affected enough by flooding to require (the option of) support:

> "All risk management partners need to find better ways to support recovery after a flood. Local flood risk management strategies should place a high priority on supporting communities and individuals in the event of floods" (FCERM, p. 27)

As outlined in chapter 5, participants demonstrated how, despite changing daily routines to incorporate personal flood governance measures, there are still impacts of flooding. For example, some suffer health issues, such as long-term anxiety, or social disruption, such as not wanting to leave their house in case of flooding. While it is promising that the documents recognise the potential impact of flooding on 'recovery', there is space for development and expansion of this position to include the impacts of flooding on daily activities. As argued earlier in the chapter, the overarching paradigm of risk management and framing of flooding as an event may restrict the potential for considering ideas impact of daily activities. This is because risk management is broadly focused on flooding hazard and location rather than the capacity of people affected, and the event framing presumes an end to recovery, which limits consideration of long-term impacts.

In 2022, RBC declared their concern for the climate emergency, stating that:

> "The borough Climate Change Strategy and Action Plan was approved by Cabinet on 29 March. The document will guide our work in responding to the climate emergency and engaging key stakeholders to support climate action" (Rochdale Borough Council, 2022, p. 2)

While the report does not explicitly frame flooding as a climate change-related issue, a commitment to borough-wide 'climate action' suggests that it is something all residents could potentially be involved with and affected by. Similarly, national guidance regarding sustainable development and flood risk management explicitly acknowledges the link between environment and people,

> "Sustainable development in the context of flood and coastal erosion risk management (FCERM) includes: taking account of the safety and wellbeing of people and the ecosystems upon which they depend" (Defra, 2011, p. 6)

While there is some mention of flooding, people, and 'recovery', in general, there is minimal evidence which reflects the deep and ongoing impact of flooding on people's daily activities, and thus quality of life. Furthermore, flood governance documents may not be the location for the framing of flooding as a broader climate change issue, since climate adaptation consists of more than just flooding. However, there are no (national or regional) climate adaptation documents at the time of writing this thesis, which suggests that a joined-up approach to climate impacts is not considered in policy in England.

Although I focus on two flood policy documents in this chapter, they link to wider (national) management of the environment and flood risk. In addition to a lack of attention to regional climate adaptation, the Climate Change Committee adaptation reports highlight great governance failures in relation to adapting to flooding and support of nature (Committee on Climate Change, 2019; Climate Change Committee, 2022).

7.4.2. Flooding impacts and daily life

Having established above that there is some recognition that flooding impacts quality of life, this sub-section will present analytical findings regarding the manifestations of the disruption within the documents. The capabilities theory provides a flexible framework for understanding the different ways that lives might be affected through the ten capabilities which Nussbaum developed (2000) (see the section introduction for the full list).

The capability most frequently mentioned throughout both documents relate to the first one on Nussbaum's list: Life. Given the previously discussed projected increase of flood risk and extreme events, considerations of risk to life become ever important.

> "In prioritising FCERM actions it is important to consider the consequences of flooding in more detail. Risk to life should be of primary importance alongside other factors such as damage to property, business and the economy, infrastructure and the environment, including the historic environment" (FCERM, p. 10)

FCERM centres the importance of protecting lives, further emphasises through the repetition throughout the document,

> "A well integrated approach to flood detection and forecasting will help ensure that flood warnings are issued in good time so that individuals, businesses, the public and the emergency services can minimise the potential loss of life and damage to property and infrastructure" (FCERM, p. 27)

As is evident above, risk to life is often mentioned alongside reference to the impacts of critical infrastructure and systems that support wider society. These too can have profound direct effects on daily lives, for example, through a child being unable to attend school, or forced to go to a different school, for months at a time. However, in both policy documents, the emphasis is on the object of disruption (i.e. the property or asset), rather than the impact it may have on the people. This emphasis suggests that the priority within the document relates to physical assets (and their financial value) rather than the more intangible social assets, like a child's education.

The capability of *political control over one's environment* can be considered as part of the recognition and procedural sections discussed above. The remaining capabilities are not mentioned in detail. Rather, there are broad-brush references to disruption and well-being,

> "Flooding can change places and lives overnight with often dramatic and sometimes long-term disruption to people's lives, properties and communities" (FRMS, p. 1)

On one hand, the broad reference could be seen to leave space for the RMAs to interpret what constitutes 'dramatic … disruption'. On the other hand, the lack of details can be seen as restrictive to people who may want to raise a flood-related issue, as there are no specific details to which they can make refer. FCERM echoes a similar sentiment,

> "Prompt action to minimise the consequences is the most effective way of limiting the immediate and longer-term impact on individuals' well-being and affected areas' economic prosperity" (FCERM, p. 27)

One perspective might hold that this broad approach to impacts on peoples' lives is aligned with the capabilities theory in that it leaves many possible impacts or disruptions to be considered. On the other hand, the language does not highlight how any impacts are understood by the RMAs, or what constitutes them. If the policy documents included an instruction to RMAs to interview a diverse selection of people in order to understand the impacts of flooding, it would seem to be an inclusive policy document with genuine concern for members of the public. However, since there is no process outlined for understanding the impacts of flooding, without more evidence, it cannot be concluded either way.

In addition, both documents demonstrate a conceptualisation of flooding with a temporal endpoint of 'back to normal'. This fits under the capabilities theme because defining an end point to the flood could invisibilise or erase impacts from flooding that outlast a defined endpoint in the documents. Each document emphasises preventative action to mitigate the likelihood of flooding occurring, rather than a concern with managing ongoing impacts of flooding. For example, FCERM highlights the need to:

> "maintain people's health and speed up the recovery process after a flood, giving people the earliest possible chance to get their lives back to normal" (FCERM, p. 48)

In contrast with this quotation, chapter 5 described how for many participants the 'flooding never really ends'. The idea that there can be a return to normal conceptualises recovery in a way that omits non-linear, temporal considerations of how people are affected by flooding in the long-term. This approach excludes potential valuable contributions such as how experiential knowledge strengthens the ability to manage flooding, the role of memory, and impacts of repeated flooding.

In addition to a recognition that quality of life can be affected by flooding, some accounts of flood experiences in chapter 5, notably by Maureen, highlighted how the impacts of flooding can compound on top of one another. She explained how the cost of her insurance had become 'like a second mortgage', and even if she saved up for flood doors, she could not install them without compromising her eligibility for a property level protection council grant. This led to her feeling trapped in a house that had already flooded several times and was often worried about being able to afford the insurance when renewal came around. The FRMS makes some acknowledgement to how

capacities to respond to flooding differ, highlighting the link between access to capital to pay for personal FRM:

> "The challenges for flood risk management include a potential lack of disposable income to invest in property maintenance and flood protection measures that could limit the impact of a flood event on their property" (FRMS, p. 39)

As highlighted in an earlier section, the conceptualisation of flooding as an (abstract) event in the policies lead to an omission of the compound risks that flooding can lead to, although some of these can span more broadly than the scope of the flood governance documents.

Considerations of scale emerge within capabilities in two ways. First, both documents reference 'longer-term' temporal scales when addressing individual wellbeing, albeit in vague detail (no actual timelines are given). The capabilities theory originates from development scholars, and in that context, was focused on the flourishing of life over longer periods than a 'moment' or 'event'. In order to be more aligned with the capabilities theory, the policy documents could recognise the many potential ways that people's lives may change as a result of flooding, and not put boundaries on the timeframe within which these may fluctuate and occur.

Secondly, it is promising to see evidence of concern for how flooding may affect quality of life within the policy documents. A critique of both the capabilities theory and the policy documents is that the focus is often on the impacts to the individual, without recognising the many interconnectivities and support networks that many people rely on and utilise when they need support.

7.4.3. Summary of capabilities

In summary, the policy documents demonstrate a strong concern for risk to life and a recognition of potential impacts on daily activities and quality of life. There are references to direct impacts, such as health and finance, and indirect impacts, such as the potential for critical infrastructure to be compromised. However, the level of detail, or plans to understand the details, relating to when and in what ways publics are impacted by flooding is lacking, especially with regard to the very long term and ways in which impacts may compound. The most recent FCERM document published in 2020 demonstrates a more nuanced consideration of the impacts of flooding and implications for FRM:

> "We also know flood victims can suffer serious mental health problems, affecting their ability to work, and further harming businesses" (FCERM, 2020, p. 77)

Reference to mental health and flooding is a significant development and improvement between the FCERM 2011 and the FCERM 2020, thus the overall trend is encouraging.

7.5 Epistemic justice in flood governance policy documents

Epistemic justice as a tenet was not included in the initial iteration of the climate justice framework. However, undertaking the policy document analysis revealed the importance of epistemic justice and it consequently it was added. After the first iteration of analysis using the other three tenets, something did not 'sit right' with the findings. During the work preparing for climate justice framework (chapter 2), I had spent time emphasising the importance of the experiential knowledge held by people affected by climate impacts, but this was not reflected in the findings at that stage.

Analysis using the other three tenets alone revealed an analysis of the policy documents which did not reflect the importance of experiential knowledge as posed by climate justice. Instead, justice as recognition highlighted how conceptualisations of the public remained relatively simplistic with little evidence recognising the value of experiential knowledge. Procedural justice analysis revealed a commitment to public engagement, although specific advice on public involvement was absent. The capabilities approach analysis demonstrated a concern for risk to life and a recognition of potential impacts on daily activities and quality of life, but the level of detail, or plans to understand the details, relating to when and in what ways publics are impacted by flooding was lacking.

As discussed in chapter 3, policy documents are written by a range of actors and authors, and published by government departments and agencies (Vogel and Henstra, 2015). Resultingly, there is no scope to engage with the document authors and their experiential knowledge. Thus, attempting to analyse policy documents against the guiding question for epistemic justice of 'What types of experiential knowledge do people hold?' yields no possible answer because there are no accounts from members of the public in the documents. Posing this question elucidates the lack of voice within the documents and restates the limitations of the policy documents discussed above. This highlights questions about the applicability of the climate justice framework which will be discussed in the thesis conclusion.

7.6 Conclusion

This chapter has employed the climate justice framework to analyse two key flood governance policy documents and interrogate the extent to which flood governance policy documents incorporate climate justice. The policy documents considered in this chapter were the national policy document from 2011, 'Understanding the risks, empowering communities, building resilience' (FCERM) and the regional Rochdale Borough Flood Risk Management Strategy (FRMS). The tenets of the climate justice framework provided the analytical structure for this analysis of flood governance policy documents.

Echoing the findings from the previous empirical chapters, some findings spanned across more than one tenet, for example how the conceptualisation of flooding influenced both recognition and procedures. Other findings spanned across all three tenets, such as the impacts and recognition of mental health arising from flooding. In the current format of the climate justice framework, such overlaps could serve to make the framework confusing, repetitive, or both. Alternatively, a degree of overlap could be expected, since, as argued in chapter 2, each of the climate justice tenets provides a different perspective of the same understanding of climate justice. The overlaps may provide a useful way to investigate a single, specific issue from different angles.

Moreover, this policy document analysis has revealed how the two documents analysed were not suitable candidates for considering themes of epistemic justice, as they do not contain voices. This raises questions about who applies the framework and in what context. It does not necessarily mean that the framework is rendered unusable or that policy documents are not an appropriate data source for investigation. Rather, it suggests that different tenets can be thought of as different 'tools', which are needed to varying degrees in different contexts. For example, in the context of engaging with people affected by flooding, it may be more appropriate to focus on epistemic justice and the capabilities approach than processes which are out of their control. The suggestions at the end of the chapter 6 may serve as a useful platform from which to consider restructuring the climate justice framework.

While the documents provide some detail of how people are potentially impacted by flooding in different ways, neither the policy documents analysed in this chapter, nor the recent 2020 flood governance policy document, consider a recognition of how areas are under resourced, or made vulnerable, through wider policy (e.g. housing policy). The documents could be considered reductionist in its approach, separating place and people from the wider political and ecological system within they reside. This reflects a rejection, rather than embrace, of the complexity of navigating responses to flooding.

Moreover, although there is evidence that the flood governance policy documents place participation and engagement as integral to flood governance, members of the public are not recognised as the 'expert residents' that climate justice positions them as. In addition, participation processes in the documents relating to public engagement are vague and piecemeal. Finally, the conceptualisation of flooding as a discrete event seems to simplify flood governance to a prevent-respond-recover cycle, which excludes the potential for considering flooding as having long-term impacts for those affected. Thus, considerations of how quality of life may be impacted are also missed

out, and potentially valuable contributions from members of the public regarding long term flooding, memory, and personal flood governance are not included.

The analysis highlighted how the climate justice framework does not offer an explicit consideration of the scale relating to which people are considered: e.g., whether there is a focus on the individual, the collective, or both. On one hand, the lack of specificity of scale may embed a flexibility into the framework. However, an explicit consideration of scale may also serve to ensure that the framework does not reproduce neoliberal and individualistic approaches to climate adaptation. Experiential knowledge is fundamental to the climate justice framework, and this is often generated through collective experiences, for example, a street who share flood risk and their understanding of the critical water level. The collective thus becomes a vital part of climate justice, and more consideration is required to develop how the climate justice framework can take account of this.

This thesis is concerned with how climate adaptation, specifically flood governance, could be climate just. Despite a general trend of improvement over time, there were significant omissions, according to the climate justice framework, of the flood governance policy documents considered. This chapter has catalogued how flood governance documents are giving more attention to climate justice themes over time, for example, through enhanced recognition of the importance of communities. Nevertheless, there are some clear areas where the flood governance documents continue to lack attention to climate justice themes, most notably with regard to the diverse needs and experience of people affected by flooding. While the analysis of this chapter was primarily focused on FCERM from 2011, the evidence has shown limited development (e.g. on the mental health impacts of flooding, but not the consequences of long-lasting impacts) in the 2020 update.

Chapter 8 | Conclusion

8.1 Introduction

This chapter concludes the thesis. It begins by summarising addressing each of the research questions before exploring how successfully the overarching aim of operationalising a climate justice framework was achieved. The chapter then discusses wider implications of the research, reflections on the research approach, and avenues for future research. It closes with some final reflections.

The aim of this thesis was to *operationalise a climate justice framework for investigating flooding via a case study in England*. The emphasis on operationalizing the framework arose from the theoretically based framework, which aimed to centre perspectives of the most affected. By operationalizing, rather than applying, the framework, I sought to make space in the discussion to reflect on whether the theory is representative of participants' experiences and concerns.

The research project set out to answer the following questions:

RQ1 What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?

RQ2 To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?

RQ3 How climate-just is English flood policy?

As a recap RQ1 was addressed in chapter 5, which presented empirical material relating to flooding experiences, in particular the 'moment' of the flooding and then experiences of flood governance. RQ2 was addressed in chapter 6, which provided a response to the empirical data presented in chapter 5 using the tenets of the climate justice framework. RQ3 was addressed in chapter 7, by thematically analysing two flood governance policy documents using the tenets of climate justice. This chapter brings together considerations of all three RQs in order to reflect on how successfully the overarching aim was met.

8.2 Answering the research questions and overarching aim

8.2.1. RQ1 What are the experiences and concerns of residents affected by flooding and flood governance actors in Rochdale Borough?

Literature suggests that experiences of flooding begin with the water and last much beyond it (Meriläinen and Koro, 2021), often involving distressing and disruptive impacts (Whittle *et al.*, 2010; Butler, Walker-Springett and Adger, 2018; O'Hare and White, 2018) although increased community connection can reduce the impacts (Quinn *et al.*, 2020). In response to this, Thaler and Hartmann have called for flood governance to "socially reinterpret[] floods: they are no longer a force majeure—an

act of God—but instead an issue of the welfare state" (Thaler and Hartmann, 2016, p. 139), suggesting that flood governance ought to extend understandings of flooding to include more than just the 'moment', but also the political decisions that result in producing the spaces of 'bad water' (Walker *et al.*, 2011) and responses afterwards.

RQ1, answered in chapter 5, was intended to tell an unfiltered 'story' of flooding, as experienced by those flooded. The data was gathered through semi-structured interviews which sought to ask about experiences of flooding to allow participants to present what they thought were the most important elements. The empirical findings from this chapter provide the data to answer RQ2 below.

Key findings revealed the following insights:

- Residents had a range of different conceptualisations of flooding. Whereas everyone saw flooding as entering into their lives with a fixed starting point, they saw it ending at different points, and many suggested flooding was still a central part of their lives.
- Residents expressed that they experienced anxiety or distress at various stages because of the flooding. This came and went and did not appear to have a clear 'end point'.
- Residents demonstrated that they undertook and managed their own flood risk, through preparedness at home, personal flood defences, evacuation planning, and long-term considerations of insurance, property protection, and moving house. In addition to managing flood risk, residents demonstrated an interest in the causes of flooding, often undertaking research to investigate further.
- Residents helped friends, family, and neighbours when they could, although in some instances they did not have time or capacity. They experienced flooding collectively. Many participants made reference to other peoples' experiences, or the impacts of flooding, and FRM projects, elsewhere.
- Residents remarked how the floodwater contains debris and contaminants, which can bring other issues such as health and safety concerns and invasive species.

Similarly, the key findings relating to experiences of flood governance can be grouped thematically:

- Broadly, residents expressed discontent with the experiences of flood governance. Discontent arose from different experiences, for example because the risk

management authorities were not visibly supporting, were difficult to contact, or did not engage to a satisfactory extent.

- Relatedly, residents and flood governance actors identified challenges relating to where responsibility lies for what, especially when the sources of flooding are complex and interrelated in practice. Residents sought to understand causes of flooding and in governance terms whose responsibility it is, as they were motivated to reduce potential future impacts.

- Some residents felt a lack of trust from the flood governance actors delivering engagement, and flood governance actors highlighted how it was a challenge to accurately convey the complexity of flood governance.

- Throughout the interviews, the importance of good relationships was highlighted by all participants, particularly noting the appreciation for Laura who played an intermediary role.

- Flood governance actors highlighted a range of challenges impact their work. These included the effectiveness of partnership approaches, challenges in aligning different (sometimes contrasting) organisational priorities, challenges in aligning investment works and capital schemes, and finally challenges relating to working across catchments.

The empirical data contributes additional detail to other scholars' broadly similar findings, that residents' experiences of flooding were personal, emotional, turbulent and non-linear (e.g. Coulthard and Frostick, 2010; Medd *et al*., 2014; Convery, Carroll and Balogh, 2015). The findings also reaffirmed that residents worked within their social circles to support one another where they could, demonstrating the importance of community connections (Quinn *et al.*, 2020). The interviews additionally uncovered the many ways residents undertook personal flood risk management, drawing on their available knowledge, which was sometimes limited. They reinforced the challenges of floodwater beyond the water damage to reveal how invasive species can be transported.

The empirical evidence, and lack of guidance in policy documents, suggested fragmentation within and between different neighbourhoods, and tension between residents and flood governance actors. An exception to this was Laura, who all participants liked. This may be due to her intermediary role or as a result of her being the central gatekeeper of my participants. Interviews across all participants suggested that there was desire in Rochdale to overcome fragmentation, and that improved community engagement may be a route to this. Research demonstrates that "empowered

and well-informed groups with community capital across demographics … can adapt, thrive and seize opportunities…[and have] potential for actionable knowledge in understanding flood resilience in different settings" (McEwen *et al.*, 2017, p. 26). However, community engagement literature emphasises the need to have context-specific approaches to ensure that it does not treat the public as one homogenous group (Fielding, 2018). It also demonstrates that previous experiences of community engagement affect the trust and willingness of publics to engage in it further (Mehring *et al.*, 2018).

Beyond the floodwater, the empirical discussion reflected that flood governance played a significant role in how residents felt about their experiences of flooding, in some cases, exacerbating stress and anxiety. This embellishes the empirical evidence found in this research which highlighted how flood governance itself plays a role in the experience of flooding for residents. More unexpectedly, challenges were also reflected by flood governance actors, who reported that they sometimes found community engagement challenging, especially if residents were angry. Many flood governance actors reflected on how structural challenges impacted their work and they sought solutions to this. This adds nuance to an argument which states that flood governance actors conceptualise and experience flooding in a removed, abstract way (Mehring *et al.*, 2021), to demonstrate that some understand and care to the extent that they want to change the system. This may be expanded through further 'compassionate climate change research' (Eriksen, 2022) to reveal how flood governance actors feel about climate change in relation to their work.

Earlier in this thesis, I explained how colleagues in Nairobi found that residents did not find flooding as concerning or disruptive as the empirical accounts of residents in Rochdale Borough. While I am not intending to suggest or speculate that flooding in Nairobi is not problematic or laden with inequalities, through this work I have reflected on how this difference may be explained. The residents in Nairobi lived in a settlement which is not legally recognised, therefore there is no formal governance or support. Resultingly, residents have low to no expectations of any formal support. In contrast, England is a heavily regulated and governed country, where citizens feel expectations to be supported. Through the accounts above, it is clear that residents felt let down, passed around, and unheard. Therefore, it could be possible that the source of distress arises in part from experiences of flood governance rather than the moment of the flooding. This may offer an avenue for further research.

8.2.2. RQ2 To what extent is a climate justice framework derived from existing scholarship compatible with the concerns of people affected by flooding?

The climate justice framework in this thesis was derived from other applications of climate and environmental justice, which have not been applied to flooding in England. This research is therefore forging a new path and there is less literature available to compare to. However, studies

engaging with similar tenets can provide foundations from which to set this work in the broader literature. Epistemic justice should take care to ensure that people can express their subjectivities (Forsyth and Mcdermott, 2022) and should not ascribe vulnerabilities without giving voice to the subjects. Recognition scholars highlight how it should be considered an ongoing process rather than a single event and is closely entwined with procedural considerations (Joy *et al.*, 2014). Furthermore, what and how is distributed (e.g. defences, costs, responsibilities) can be captured in detail by the capabilities framework but it a further question to suggest what the lower and limits of capability could be considered as (Schlosberg, 2019). Thus, scholars doing adjacent work highlight the complexities arising from the interaction of the tenets (Burnham *et al.*, 2013; Joy *et al.*, 2014; Siders, 2022).

RQ2 was addressed by considering each of the key tenets, epistemic justice, justice as recognition, procedural justice, and the capabilities approach, of the climate justice framework in turn. Starting with evidence of epistemic justice, the empirical data highlighted the expansive and valuable experiential knowledge generated through experiences of flooding. Residents evidenced complex understandings of how water moves through their locality, and an awareness of when there may be a risk. They also recounted strategies of mutual aid and helping one another, as well as managing 'recovery' and insurance claims, in addition to navigating governance structures. Not only could a deep commitment to epistemic justice reveal new sources of information regarding flood responses, but it may also change the way that flooding is conceptualised through a greater understanding of how the public is consistently affected by flooding in the long term.

When reflecting on themes of recognition, it is relevant that, due to methodological choices and accessing residents through a gatekeeper, I only spoke with residents who had been recognized in some way. To lesser or greater degrees, everyone I spoke to had encountered flood governance actors (mostly Laura my gatekeeper, but sometimes others too) who acknowledged the horribleness of their experiences and who sought to help them address the issues it raised. Despite that, and although residents demonstrated experiential knowledge, there was little evidence that it was considered important by flood governance actors. Furthermore, a shared desire from residents to be more involved with RMAs demonstrated that they did not feel fully recognised in how they were impacted by flooding. However, this finding highlighted overlaps within the climate justice framework, as the same point also related to procedural justice themes. For example, not only did residents want to be involved, some participants recounted how they tried to engage but felt that they were being 'passed around'.

The investigation of procedural justice themes highlighted that it was a concern of both residents and flood governance actors, in the sense that residents were eager to be more meaningfully involved in flood governance, and some flood governance actors also wanted to be able to offer meaningful engagement. The climate justice framework captured these thoughts through the guiding questions, but in its current form, it does not offer a clear way to engage with them. This may be partially because of the structural nature of procedures. As highlighted, spatial, and temporal scales interact in a complex way. Furthermore, procedures cannot be neatly nested: the influence of national policy may be felt differently in different locations. Reflections on this tenet demonstrate that it is an important aspect but requires further consideration.

Considerations of the capabilities approach highlighted impacts of flooding in a novel way, leaving space for considering how the impacts of flooding outlast the presence of the floodwater, or even the drying up process. The interviews revealed that, while there were many similar priorities regarding political participation, participants demonstrated that each had their own interests and priorities, and the capabilities approach allows for individuals to pursue what matters to them. This contribution is valuable but could be critiqued for giving prevalence to the individualistic nature of the capabilities approach. This raises questions regarding how it might be possible to apply the capabilities approach on a bigger (e.g. community) scale. Further investigation could align with projects that have begun considering this, such as community capabilities in Australian climate adaptation (Schlosberg, Collins and Niemeyer, 2017), to understand how considering climate justice on behalf of different size groups may affect the process and or outcomes.

RQ2 sought to identify whether themes from the empirical material in chapter 5 matched up with the climate justice framework. The motivation was to understand the extent to which the climate justice framework prioritises topics which are also considered important by people most affected by flooding. Each of the four tenets were relevant to the empirical interview data. Importantly, people affected by flooding here included not only those who were directly affected, but also the flood governance actors who were affected through their work relating to flooding. It highlighted the relevance of epistemic justice to all participants, in terms of feeling that they have something to contribute to flood governance. It also demonstrated how, despite interactions with flood governance, many participants still felt that they would like to be more recognised. Relatedly, limited (sometimes competing) resources posed a barrier for some flood governance actors to deliver meaningful community participation, illustrating the relevance of procedural justice. Finally, residents described the ways that flooding had uniquely impacted them and their daily lives, which speaks to the capabilities approach.

The theoretically derived framework, and the points it raised, broadly accorded well with the points raised by my participants. In this sense it demonstrated that the theoretically derived framework drawn from empirical work on other topics was applicable to local issue of flood risk in the UK. That the findings of RQ2 confirm the sound theoretical foundation of the climate justice framework justified the application of the framework to flood governance policy in the proceeding RQ, revealing that climate justice considerations continue to be relevant to issues of flooding and should thus be considered more tangibly in practical guidance or policy documents.

The difficulty of engaging with some guiding procedural questions suggest that more methodological work needs to be done on applying the framework. Although I have demonstrated that there is merit in the framework, research could usefully pick up on the context of using the framework: whether it seeks to analyse or suggest, who uses it and to what end, how many people it can represent or consider, and how to provide enough useful guidance without being directive or invisibilising experiences.

Aspects of the framework aligned broadly with debates in climate justice literature relating to forefront subjectivity of participants and interactions between recognition and procedural tenets but all to some degree. The findings extend the discussion on whether capabilities require a subsistence level and how this could be measured, as it shows over time how participants' capabilities fluctuated, and many adjusted to a new normal.

The interrogation of the climate justice framework speaks to debates about the applicability of climate justice. It supports the observations that justice is a complex, overlapping, and political issue (Tschakert *et al.*, 2021; Forsyth and Mcdermott, 2022) and highlights the importance of involving a range of voices. Exploring issues of climate justice within flooding suggest nuanced and often unclear paths of causality and could usefully be considered alongside studies on the role of existing structural inequalities in climate injustice (Sultana, 2022). In addition, application of the framed raised questions, scarce in justice literature, regarding who uses the framework and how this may impact process or outcomes. Specifically, when reflecting on conversations with my participants, it became clear how analysis of the framework exposed the technical language of climate justice, encouraging the development of an alternative, accessible language for climate justice.

8.2.3. RQ3 How climate-just is English flood policy?

Analysis of flood governance policy documents points to a technocratic approach already recognised in England flood policy (Thaler and Hartmann, 2016). While flood risk models and financial mechanisms remain important for flood governance, the solely technical framing is incapable of preparing for the wide ranging impacts of flooding (Morrison, Westbrook and Noble, 2018) due to

links with conceptualising flooding as single, linear events (O'Hare and White, 2018). In contrast, altering the framing of flooding as constructed of moments of 'eventness' embedded in complex socio-political situations can incorporate memories, relationships, and fluctuations (Meriläinen and Koro, 2021; Puzyreva and De Vries, 2021) and reveal new links and patterns through which to understand flooding.

Furthermore, analyses of governance within flood policy documents reflect how flood governance in England is "top-down and fragmented" (Newson, Lewin and Raven, 2022, p. 116), which the findings reproduced. Scholars also state that "complex governance arrangement actually demonstrates de-coherence over time due to ongoing institutional fragmentation" (Benson and Lorenzoni, 2017, p. 1921). The empirical findings in Rochdale Borough suggested that residents and flood governance actors alike had a desire for increased coherence and engagement, and policy analysis reiterated a lack of clear direction regarding community engagement and partnership working.

The key findings of RQ3 were that the flood governance policy documents demonstrate some themes relating to climate justice, although there are also some omissions. For example, it was found that some people (rather than flood governance actors) are considered as important for flood governance, although the nature of the importance was unclear. It may be that the public is considered important due to their potential role as funders of FRM, or simply that they are affected by flooding. A key omission in this example was that the flood governance policy documents rarely positioned people affected by flooding as epistemic knowers, especially not as people who could feed into national flood governance strategising.

The findings of chapter 7 highlighted how underlying conceptualisations are vital to governance responses. A climate risk approach taken in the documents placed emphasis on individual and disconnected events. Additionally, they refer to participation in name only: there was little evidence of how this would be undertaken, leaving it open to interpretation. In contrast, a climate just framing of flooding might problematise flooding as a physical phenomenon which can lead to social issues, due to the impacts of flooding on people who are affected. In addition, it might consider flooding as an ongoing state of potential risk which can be more or less likely and interact with other existing risks, such as public health issues, and personal characteristics, such as precarious work or personal health conditions. A climate just approach to engagement with people affected flooding might make explicit the value of their experience and ensure that processes are inclusive and flexible.

Empirical analysis showed how policy documents continue to conceptualise distinct, predictable flood events, implying that a flood is a purely physical presence from which everyday life

can be returned to after the water has cleared away, echoing the literature which has found flood governance to be technical and narrowly conceptualised (Thaler and Hartmann, 2016; Morrison, Westbrook and Noble, 2018; O'Hare and White, 2018). Details of community engagement and decision-making were sparse in the policy documents which suggests, although is not clear, that processes are at best lacking transparency and there remain opportunities to increase procedural justice in alignment with the study by Begg (2018).

Critical conceptualisations of disasters, including flooding, as socially-constructed and creeping (e.g. Meriläinen and Koro, 2021) align with residents accounts of flooding, but not with the policy documents which remain technocratic. Introducing alternative 'imaginations' of a hydroscape which "holds, soaks, blows, seeps, osmotes, and transpires" (Mathur and da Cunha, 2020, p. 139) may offer a way to radically rethinking flooding in a manner aligned with the experiential knowledge, and subvert the rigid and technical ways of understanding flooding and therefore delivering flood governance.

Through answering RQ3, policy document analysis revealed the challenge of applying epistemic justice considerations to documents which are published without including voices and are intended mainly for technocrats and policy actors. Therefore, the analysis of policy documents could not provide a full picture from which to investigate all tenets of climate justice. This is not necessarily a shortcoming but suggests that the tenets may be considered as different 'tools' which can be more or less useful across different contexts. This application of the climate justice framework can also elucidate considerations for the overarching aim of the thesis, considered below.

In conclusion, and in line with the literature, this investigation revealed that England's flood governance can not be considered very climate just. There are suggestions of a desire for climate justice in the accounts of flood governance actors, although they highlight structural barriers relating to resourcing, capacity, and competing priorities. However, in many significant elements, for example the valuing of experiential knowledge and conceptualisation of flooding as a long-lasting disruption, it remains ambiguous, and hence, in a structurally unjust world, provide opportunities for unjust application.

8.2.4. How successfully did this thesis operationalise a climate justice framework for investigating flooding in England?

The RQs addressed were intended to work together to meet the overarching aim of operationalising a climate justice framework. Considered together, the RQs can reveal insights about the mechanisms of the framework. This subsection returns to the reflective questions posed in chapter 2 to discuss what was achieved by operationalising the framework. It considers how

conceptualisations of flooding affect the framework, how the framework addresses the concerns of different actors, how the tenets interact, the usability of the framework, and what the framework can offer.

How do conceptualisations of flooding fit alongside the climate justice framework?

The conceptualisation of flooding has significance for the application of and engagement with the climate justice framework, since the conceptualisation of what flooding is, and why it is a problem, necessarily impacts the shape that climate justice can take. The development of the tentative climate justice framework in chapter 2 discussed the importance of epistemic justice for understanding claims of climate (in)justice (Forsyth and Mcdermott, 2022) which links to individual conceptualisations of flooding. It became clear through the empirical chapters that residents, flood governance actors, and policy documents present different conceptualisations of flooding. Furthermore, the empirical content discussed in this thesis affirms the argument made in chapter 2 that justice should be built from context, not ideology (Schlosberg, 2012; Joy *et al*., 2014). However, that there are varying conceptualisations of flooding (Puzyreva and De Vries, 2021) also raises questions about how the framework should include or manage these, since unquestioned mainstream approaches can exclude voices (Forsyth and Mcdermott, 2022).

How might the framework respond differently when used by different people?

Unexpectedly, the interviews revealed that some flood governance actors expressed feeling worried about working in flood governance due to feelings that, despite many people caring and working hard to address the challenges, current resources and capacities were inadequate. These differing experiences were captured through epistemic justice and capabilities approach tenets and demonstrate an additional dimension to challenges of flooding, thus broadening an understanding of impacts to include the flood governance workers.

The technical skew in flood governance may mean that actors are not sufficiently skilled to undertake engagement. Resultingly, trusted intermediaries such as Laura become more important. Moreover, including a wide range of voices in considerations of climate justice can heed the advice of Tschakert et al (2021) who advise that it is important to surface any experiences which may have unintentionally reinforce existing structural inequalities.

How do each of the tenets interact (across contexts) and what are the implications of this for the climate justice framework?

Siders' findings that tenets are interdependent and iterative (Siders, 2022) were strengthened in the reflexive application of the climate justice framework in chapter 6. The tenets of justice which were presented in Figure 2-2 (chapter 2) were found to be complex in their interactions. The earlier

figure posed the question of whether there is a hierarchy among the tenets or whether they are interdependent. The findings suggest that there is no clear hierarchy among the tenets, and there were numerous interactions and overlaps across all four tenets and cross-cutting considerations of scale. Rather than surfacing clear patterns of interactions between the tenets, the findings suggested that tenets can offer slightly different, but related, perspectives when investigating a specific thing. For example, the discussion relating to experiences of flood governance involved all four tenets. The analysis of epistemic justice highlighted participants' (residents and flood governance actors) knowledge, justice as recognition highlighted whether residents are seen as affected by flooding and how, procedural justice highlighted the ways in which residents are (not) involved in flood governance, and the capabilities approach highlighted how residents sought to be politically included. This demonstrates how each tenet offers a complementary angle of climate justice.

Figure 8-1 presents an updated version of the diagram presented in chapter 2 to emphasise the nature of these nuanced interactions more accurately. Specifically, whereas Figure 2-2 depicted the tenets as connected through arrows indicating mutual influence, Figure 8-1 shows the tenets as overlapping, to suggest that addressing justice concerns in one tenet (e.g. procedural) may have impacts in another, which may be a consideration for further investigation. This is intended to illustrate the potential for overlaps without limiting the framework to specific interactions.

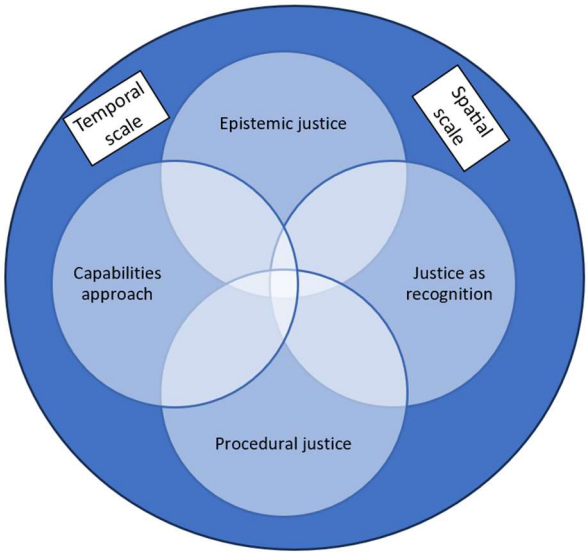

Figure 8-1 Amended climate justice framework

I arrived at this updated diagram through the process of reflexivity. Throughout my fieldwork, I reflected on the theoretical framework and the extent to which it reflected the discussions I was having with participants. In this way, it was continuously in my mind as I undertook the analysis. As noted above, although I see the climate justice framework as a work in progress, each further step

brings additional value and insight, and I would welcome others further applying and evolving it. The updated diagram reflects both a development of my positionality and the climate justice framework.

There are two key differences in the updated version: the interactions between the tenets and the inclusion of temporal and spatial scales within a boundary. It became evident through analysis that there are many overlapping aspects of each of the tenets, in different combinations. I felt that the original diagram suggested that there was a discrete order to the tenets of justice, which the overlap here intends to overcome. Secondly, temporal and spatial scale were floating around the outside of the previous diagram, as though they were optional considerations. However, through the fieldwork I felt that understanding the context of space and time was vital to exploring concerns of climate justice. Thus, I updated the version to locate them within the main boundary and indicate their centrality to climate justice.

As I have posed in my discussion, although I have furthered theoretical thinking on the climate justice framework, there are still many questions yet to be answered, especially around application, which I will discuss in section 8.5. It is my expectation that exploring these would develop and change the framework yet again.

What might the framework be able to offer or achieve?

The resulting climate justice framework was felt to be significant because it presents a new way to understand climate impacts. This finding was developed through a case study in England and is likely to be relevant to the UK and other similar country contexts. It contributes to a growing base of empirical accounts of climate justice which can extend theoretical debates and practices, namely the wide-ranging experiences of people, including flood governance actors, affected by flooding and the useability of the overlapping tenets. I return to the sentiment with which I began, expressed in the Handbook of Climate Justice: “climate justice has enormous value as an interpretative framework within which to examine and evaluate responses to climate change” (Meikle, Wilson and Jafry, 2016, p. 491). With reflexive application, the framework may offer opportunities to consider a broader geographical scope, both relating to country context and subject. I discuss this further in directions for future research below.

8.2.5. Contributions to knowledge

The central contribution of this thesis is the operationalisation of a climate justice framework for investigating flooding in England, and which develops climate justice theory. In addition, this thesis contributes conceptualisations of flooding and climate-just adaptation more broadly. These points are considered in turn below.

The theoretical development of the climate justice framework took place through considering empirical evidence from residents affected by flooding and flood governance actors in Rochdale Borough Council. While the interrogation revealed avenues for deeper consideration, it held up in terms of capturing the types of issues and experiences highlighted by my participants. The application of the framework for understanding the extent to which flood governance policy documents can be considered climate just corroborated insights picked up in the literature and poses questions regarding who uses the framework and in what context. The resulting framework, discussed in detail in the previous section, confirms and extends the discussion about climate justice presented within the literature review. In chapter 2, I discussed how scholars have employed the trivalent approach as a well-established climate justice framework (Schlosberg, 2004; Walker, 2009; Joy *et al.*, 2014; Forsyth and Mcdermott, 2022). Alongside this, I also explored the relatively recent addition of epistemic justice (Fricker, 2007; Bacevic, 2021; Tschakert *et al.*, 2021). Through the operationalisation of the tentative climate justice framework, this thesis not only affirms the significance of the trivalent tenets but also extends the conversation on epistemic justice, emphasising the value of experiential knowledge. An essential aspect of these contributions is that, without considering epistemic justice, the tenet of recognition can be limited to acknowledging others. The inclusion of epistemic justice demands a transfer of power and a centring of people impacted by climate change through the value of their experiences.

The contributions to the conceptualisation of flooding in this study reaffirm the key literature points discussed in chapter 3, but also suggest some small developments of it. I presented the well-established notion that flooding is widely conceptualized in literature as a socially constructed and political phenomenon (Walker *et al.*, 2011; Thaler and Hartmann, 2016), and that flood governance mechanisms are overwhelmingly technocratic in nature (Johnson and Priest, 2008; Doorn, 2013; Moon, Flannery and Revez, 2017). I brought in disaster literature as a lens to characterise flooding as an unfolding, long-term process punctuated by acute events (Meriläinen and Koro, 2021; Puzyreva and De Vries, 2021), which emphasised the situated nature of conceptualisations and the challenge in attributing temporal boundaries. Chapter 5 demonstrated how the interviews I conducted on experiences of flooding reinforce the social construction of flooding and that the opportunities that the public had to contribute were purely about their experiences but not their expertise. This was what I expected from the literature, but the findings built on it further by considering how not only residents but also FG actors have experiential knowledge of working in flood governance. However, the documentary analysis in chapter 7 suggests that, despite participants describing flooding as a pluralistic and experiential phenomenon, there is a disparity between this conceptualization and its reflection in policy. While there are indications that flood governance is making a move towards

increased consideration of residents and the public through a stronger discussion in the policy, there remains a strong foundation of technocracy. Although the *recognition* of community and public is more prevalent in the 2011 FCERM policy than the previous one, the *epistemic, procedural* and *capabilities* aspects of the policy remain underpinned by technocratic priorities, such as improving efficiency of models.

Moreover, this thesis highlights the importance of considering perspectives of FG actors as an additional position for understanding the complexity of flooding and also for influencing policy measures. This thesis highlights that although residents and the public are given greater attention than previously, there is a continuing gap between policy priorities and what the literature presents as just adaptation. Specifically, while the experiences of residents are considered, they are seldom given a status as experts; meanwhile, the FG actors are treated as merely experts, and their experiential or emotional contexts are not given weight or importance. The addition of the epistemic justice tenet to the framework encourages the inclusion of the different types of knowledge.

Returning to the broad discussion of climate-just adaptation that this research sought to contribute to, The complexity arising from the interrelated nature of the tenets aligns with Siders' claim that adaptation is a complex problem to solve (2022). Rather than a solvable problem, I contend that climate adaptation is necessarily complex due to the emergent nature of climate impacts which depend on past and present climate emissions. This thesis has underscored the importance of people-centred climate adaptation by demonstrating both that people impacted by climate change have valuable knowledge and are not meaningfully involved. However, there remain substantial questions about how to deliver climate-just adaptation efforts, particularly when dealing with large and diverse populations.

The findings of this thesis press forward debates on climate justice, particularly its transferability to help guide climate adaption in the global north. Returning to Ahmed's 'sweaty concept', I want to reiterate that thinking through climate justice is a necessarily iterative, contextual, and collective process. It may not have an 'end point' and must always fit the context to which it is applied, so there is much to consider in more depth. The findings discussed above reflect on the alignment between the theoretical development and practical application of a theoretical climate justice framework. Therefore, the framework has merit in understanding contemporary experiences of flooding in England and affirms the framework as a workable starting point for future research.

8.3 Implications for policy and practice

There is significant potential from these findings for flood governance. While efforts can be made to reduce urbanisation and construct away from flood risk areas, climate change will render

flooding in England more likely, regardless of defences built or actions taken (The Joint Committee on the National Security Strategy, 2022). Flood governance, on the other hand, has potential to take many different forms, and the empirical findings suggest that experiences of flood governance play a significant role for residents and flood governance actors. This research builds on growing evidence base that community engagement is central to productive flood governance (Mehring *et al.*, 2018; e.g. Environment Agency, 2019). The framework could also give direction to policymakers for considering climate change in flood and coastal erosion risk management. As mentioned elsewhere, co-production and the meaningful inclusion of people as experiential experts is central to this.

This research continues to challenge the technical bias of flood governance in policy documents. The reframing of flooding as a fast onset disaster based in wider socio-political considerations exposes a broader conception of flooding. This suggests that climate justice can reveal novel contributions, including experiences of residents and the importance of the experiences of the flood governance actors in delivering flood governance. Importantly, this work has shown that flood governance actors can contribute their experiential knowledge to input, not only on the mechanisms of flood governance, but also around the challenges and anxieties of working in climate adaptation. Deeper explorations of this could draw on Eriksen's suggestion of compassionate climate change research (Eriksen, 2022).

Outside of academia and governance, it is my hope that as campaigning groups call for climate justice to be increasingly considered across all realms, this framework can articulate some practical ideas which reflect how climate justice may manifest. Climate justice began from grass roots groups calling for systemic change and needs to reflect the needs of those on the frontlines who are equipped with the experiential knowledge on the varied impacts of climate change.

8.4 Reflections on the research approach

This project emerged from the confluence between civil engineering and climate activism. The focus of the project was to understand what climate justice might look like for climate adaptation in England, and the aim was to operationalize a climate justice framework for investigating flooding via a case study in England. This aim was addressed by theoretically developing a climate justice framework based on the literature and comparing it to thematically analysed experiences of flooding and flood governance. This thesis provides a foundation from which to develop understandings of what climate justice might mean in practice when investigating flooding in England.

My positionality as a campaigner on climate issues and civil engineer shaped my approach and understanding of this project. While I have maintained a commitment to exploring climate justice and flooding in England throughout the four years of work for this thesis, starting from a positivist

foundation required a steep learning curve and the research project iterated and emerged as a result. There were instances where my previous experiences brought benefits, such as the ability to understand (more) technical perspectives from participants. Furthermore, positionality is not static, and my position on climate activism has developed throughout this project. I entered the project ready to identify the injustices dealt by 'bad' powerful actors, but have found that where injustices occur, it is largely a product of an unjust system rather than bad intent from actors. On the contrary, I found that the majority of participants demonstrated a deep concern for the impacts of flooding on others.

This research started by shaping a 'best guess' of climate justice from the positions of people most affected, rather than setting out to directly ask what their ideas of justice are. Unlike other investigations of flooding and justice, I did not seek to abstractly apply a theory of justice aligning with my politics, instead I sought to validate the climate justice framework according to the experiences of those most affected. This research would have been well placed as part of a co-production or action-research methodology, but it was not feasible in this PhD timescale.

This research project was undertaken between 2018 and 2023. Resultingly, a key disruption of the project was the Covid-19 pandemic, which required me to change methodology. However, this did not stop this research from offering valuable insights and findings. The reduced sample size allowed more time for me to maintain ongoing relationships with participants and increase trust between us. The single case study of Rochdale Borough was designed to undertake a deep analysis of how flooding experiences and flood governance processes manifest within one area, although it would have added to the empirical data had I been able to visit the locations. Furthermore, while the interview techniques of phone or video interviews meant that I could only interview technologically savvy participants, it also provided an opportunity to interview participants from the comfort of their homes and offered a greater range of potential times in which to undertake the interviews.

Relatedly, a limitation of this research is that I was only able to interview residents affected by flooding in Rochdale Borough. This partially arose from the impacts of the pandemic, as it restricted the methods through which I could recruit participants. The empirical data gathered affirms and adds nuance to debates in the literature, but the inclusion of a wider range of people affected by flooding may add further detail. In particular, accounts from people affected due to leisure activities, commutes, disrupted services and critical infrastructure may offer additional perspectives.

8.5 Directions for future research

This thesis provides a foundation for developing timely research for applications of climate justice to climate adaptation endeavours in England. There are three key areas where development of the material in this research project could tangibly further this agenda.

Firstly, a co-productive process could re-develop a climate justice framework in a flood context, hence validating or challenging this framework. This research has already provided the groundwork justifying the theoretical content of the climate justice framework. Although this is a valuable insight, it remains a significant undertaking to explore in-depth the application and outputs that the framework could generate. Findings relating to this were discussed in chapter 6, which highlighted the complex nature of the interactions between the tenets of climate justice and this chapter presented an alternative representation based on these findings. However, this may be extended by considering the language of the climate justice framework further. Rather than using a framework comprised of justice language, it may be more usable to develop a list of underpinning principles according to themes arising from the empirical data, such as 'inclusion' and 'reflection'. In my opinion, instead of a desk-based task, this endeavour would most constructively be achieved by engaging on a specific issue or area of flood risk with resident and flood governance actors. Deep consideration of a specific issue may yield the beginnings of a climate justice framework which works for those whose issues it is intended to represent. Providing the researcher has appropriate contacts, this approach could employ a co-produced and action research methodology.

Secondly, while the above discussion reflects the successes in investigating how suitable this climate justice framework was for investigating climate adaptation in England, it would benefit from further validation through the application to more contexts and could be extended in several ways to consider: other flood events, other contexts, to compliment wider justice theories, and to consider the more-than-human world. The case study illustrated accounts of flooding and flood governance in Rochdale Borough through a snapshot of interviews and policy document analysis, further research may usefully undertake an ethnography or observation of flood governance to better understand the interactions, processes, and reflections which relate to flooding and forms of flood governance. Comparative studies of flood governance in countries with comparable flood risk may reveal new perspectives from which to consider climate justice. Returning to adjacent theories of justice briefly discussed in Chapter 2, it may be pertinent to continue comparing and learning from environmental justice and energy justice, for example, to understand how tenets of justice evolve through application. Finally, many theories of climate justice place great value on the more-than-human world, and this climate justice framework could be considered with a broader focus of subjects.

Finally, the impacts of flooding, and climate change more broadly, will evolve and change over time. This research conceptualises flooding as one climate impact, but the practical experience of flooding is that it not only occurs alongside other floods but is further compounded by climate impacts such as heatwaves and droughts. In order to strengthen the climate justice framework, and potentially broaden its application, research should address and combine the compounding and additional

climate events (e.g. drought). Furthermore, climate change does not happen in a vacuum or separately from existing injustices and inequalities (Stephens, 2022). It would be pertinent to explore how the climate justice framework can manage multiple, potentially conflicting, conceptualisations in order to avoid siloed boundaries (Newell *et al.*, 2021) around individual climate impacts.

Revisiting the idea of 'sweaty concept' (Ahmed, 2017) discussed at the end of chapter 2, and which evokes the necessary effort and energy required to bring about change, can help think through what is required in the latter two points. Both considering a wider range of flood contexts, within and beyond England, and bringing in additional climate impacts, involves validation or revalidation of these findings. Applying the climate justice framework in scenarios more similar to Rochdale Borough council may be less sweaty whereas scenarios which are significantly different may require more work and consideration and are therefore more sweaty.

8.6 Closing remark

The impacts of climate change, as I have sought to highlight throughout this thesis, are ever increasing and of significant importance, especially when there are numerous justice concerns directly related. This thesis has contributed to the expanding literature exploring how to navigate the challenges of climate adaptation in a just way (Siders, 2022). It has demonstrated that, contrary to reservations on whether climate justice can be translated and applied to climate adaptation (Byskov *et al.*, 2019), the climate justice framework developed in this thesis can offer valuable insights into flooding and flood governance in England.

This thesis is especially pertinent given how recently the Climate Change Committee has found "very limited evidence of the implementation of adaptation at the scale needed to fully prepare for climate risks facing the UK across cities, communities, infrastructure, economy and ecosystems" (Climate Change Committee, 2023, p. 11). While this thesis investigates a single climate impact of flooding, there is potential to theorise about climate adaptation in England, and abroad, more widely. Thus, the discussions of climate justice and adaptation in this thesis provide timely and important considerations which can contribute to broader conversations regarding a just navigation of the (climate) challenges that lie ahead.

I began this thesis motivated and energised by conversations, actions, and people across various campaigns, and I want to conclude it by returning to them. This research has delved into the theoretical roots and debates of climate justice and developed a framework for investigating flooding in England. However, as discussed, climate justice is intended to be a tool for people most affected by climate change and thus needs to work for them and their struggles. Therefore, I hope that grassroots campaigners build on, shape, critique, and iterate climate justice and that academics can continue to

strengthen the work of the grassroots and sustain their practises of ‘trying to transform the world’, in the words of Ahmed (2017).

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Appendix I: Information sheets

Information sheet for public participants

Participant Information Sheet 19.05.2020

Research Project Title: Exploring Flood Risk Management and impacts of flooding in England

Lead Researcher Name: Juliet de Little

You are invited to take part in a research project exploring the role of Flood Risk Management and impacts of flood risk on daily life in England. Before you decide whether or not to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Feel free to ask me if there is anything that is not clear, or if you would like more information. I would like to stress that you do not have to accept this invitation, and only agree to take part if you want to.

Thank you for reading this.

1. What is the purpose of the project?

This study will be looking at two things: 1) the role of Flood Risk Management in England and 2) how daily life is impacted by living with flood events. The research seeks to understand what people living in areas of significant flood risk consider to be important during a flood, both in terms of the policy and in terms of daily experience. This project will form the basis of the researcher's PhD thesis.

2. Why have I been chosen?

This study aims to gather information and opinions from individuals who are at risk of flooding or who have experienced flooding themselves. As someone who lives in a flood risk area, your ideas and opinions are relevant to this study.

3. Do I have to take part?

Participation is voluntary. If you decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. You can withdraw at any time up to a month after the data is collected (NOTE: It might also be possible to withdraw subsequently but it depends on how far the data analysis has progressed. As long as analysis can be easily amended, any wish to withdraw be acted upon). Withdrawal can happen without any negative consequences and you do not have to give a reason. If you wish to withdraw from the research, please contact Juliet de Little (see bottom of document for contact details).

4. What will happen to me if I take part? What do I have to do?

If you choose to take part in the research, you will be invited to attend a (online or face-to-face, in line with University of Sheffield Covid guidelines and your preferences) one-hour interview with the lead researcher. After the interview you will be provided with a summary of what you said and given a four-week window for comments, after which it will be assumed that no response is consent. In addition, the researcher might request your time for a second interview some months later. You only need to partake in the stages that you would like to, and there will be no negative consequences for saying no.

5. Are there any risks of taking part?

Participating in this research is not anticipated to cause you any disadvantage or discomfort. No potential physical or psychological harm or distress is expected. The project is interested in experiences of flooding. While all efforts will be made to avoid and mitigate distress, this may be upsetting to recall and discuss this experience. If you feel upset, you can take a break at any time and the researcher can share a list of useful resources.

6. What are the possible benefits of taking part?

Whilst there are no immediate benefits for those people participating in the project, it is hoped that you will find the process of being interviewed interesting and enjoyable. More broadly, you might like the idea of participating in work that could help flood risk policy to be improved.

7. Will my taking part in this project be kept confidential?

All the information that is collected about you during the course of the research will be kept strictly confidential and will only be accessible to members of the research team. You will not be able to be identified in any reports or publications unless you have given your explicit consent for this.

8. Will I be recorded, and how will the recorded media be used?

Any audio and/or video recordings of your activities made during this research will be used only for analysis. No other use will be made of them without your written permission, and no one outside the project will be allowed access to the original recordings.

9. What is the legal basis for processing my personal data?

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

10. What will happen to the data collected, and the results of the research project?

Due to the nature of this research it is very likely that other researchers may find the data collected to be useful in answering future research questions. I will ask for your explicit consent for your data to be shared in this way.

11. Who is organising and funding the research?

This research is organised and funded jointly by the University of Sheffield.

12. Who is the Data Controller?

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

13. Who has ethically reviewed the project?

This project has been ethically approved via the University of Sheffield's Ethics Review Procedure, as administered by 'Urban Studies and Planning' department.

14. What if something goes wrong and I wish to complain about the research?

In the first instance, complaints should be reported to the lead researcher, Juliet de Little. However, should you feel that your complaint has not been handled to your satisfaction, you can contact the Head of Department, who will then escalate the complaint through the appropriate channels. If the complaint relates to how your participants' personal data has been handled, information about how to raise a complaint can be found in the University's Privacy Notice: https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

15. Contacts for further information

Juliet de Little
Lead Researcher
jmdelittle1@sheffield.ac.uk
Department of Urban Studies and Planning, University of Sheffield, Western Bank, Sheffield S10 2TN

Liz Sharp
First Supervisor
l.sharp@sheffield.ac.uk
Department of Urban Studies and Planning, University of Sheffield, Western Bank, Sheffield S10 2TN

Every participant will be given a copy of the information sheet and, if appropriate, a signed consent form to keep. Thank you for taking part in this project.

Information sheet for flood governance actors

Participant Information Sheet 19.05.2020

Research Project Title: Exploring Flood Risk Management and impacts of flooding in England

Lead Researcher Name: Juliet de Little

You are invited to take part in a research project exploring the role of Flood Risk Management and impacts of flood risk on daily life in England. Before you decide whether or not to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask if there is anything that is not clear or if you would like more information. I would like to stress that you do not have to accept this invitation, and only agree to take part if you want to.

Thank you for reading this.

1. What is the purpose of the project?

This study will be looking at two things: 1) understanding the role and extent of Flood Risk Management in England and 2) how daily life is impacted by living with flood events. The research seeks to understand how FRM policy works in practice, and what FRM actors consider to be important during a flood, both in terms of the policy and in terms of daily experience. This project will form the basis of the researcher's PhD thesis.

2. Why have I been chosen?

This study aims to gather information and opinions from individuals involved in flood risk management. As someone whose work is related to flood risk management, your ideas and opinions are relevant to this study.

3. Do I have to take part?

Participation is voluntary, if you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can withdraw at any time up to a month after the data is collected (NOTE: It might also be possible to withdraw subsequently but it depends on how far the data analysis has progressed. As long as analysis can be easily amended, any wish to withdraw be acted upon). Withdrawal can happen without any negative consequences and you do not have to give a reason. If you wish to withdraw from the research, please contact Juliet de Little (see bottom of document for contact details).

4. What will happen to me if I take part? What do I have to do?

If you choose to take part in the research, you will be invited to attend a one-hour interview with the lead researcher. After the interview, you may be invited to a second interview or a focus group. You only need to partake in the stages that you would like to, and there will be no negative consequences for saying no.

5. What are the possible disadvantages and risks of taking part?

Participating in this research is not anticipated to cause you any disadvantage or discomfort. No potential physical or psychological harm or distress is expected.

6. What are the possible benefits of taking part?

Whilst there are no immediate benefits for those people participating in the project, it is hoped that you will find the process of being interviewed interesting and enjoyable. More broadly, you might like the idea of participating in work that could help flood risk management policy to be improved.

7. Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be kept strictly confidential and will only be accessible to members of the research team. You will not be able to be identified in any reports or publications unless you have given your explicit consent for this. If you agree to us sharing the information you provide with other researchers (e.g. by making it available in a data archive) then your personal details will not be included unless you explicitly request this.

8. Will I be recorded, and how will the recorded media be used?

The audio and/or video recordings of your activities made during this research will be used only for analysis and for illustration in conference presentations and lectures. No other use will be made of

them without your written permission, and no one outside the project will be allowed access to the original recordings.

9. What is the legal basis for processing my personal data?

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

10. What will happen to the data collected, and the results of the research project?

Due to the nature of this research it is very likely that other researchers may find the data collected to be useful in answering future research questions. We will ask for your explicit consent for your data to be shared in this way.

11. Who is organising and funding the research?

This research is organised and funded jointly by TWENTY65 and the Urban Studies and Planning department at the University of Sheffield.

12. Who is the Data Controller?

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

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In the first instance, complaints should be reported to the lead researcher, Juliet de Little. However, should you feel that your complaint has not been handled to your satisfaction, you can contact the Head of Department, who will then escalate the complaint through the appropriate channels. If the complaint relates to how your participants' personal data has been handled, information about how to raise a complaint can be found in the University's Privacy Notice: https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

15. Contacts for further information

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Department of Urban Studies and Planning, University of Sheffield, Western Bank, Sheffield S10 2TN

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Every participant will be given a copy of the information sheet and, if appropriate, a signed consent form to keep. Thank you for taking part in this project.

Appendix II: Consent form

'Exploring Flood Risk Management and impacts of flooding in England'

	Please initial in the box
Taking Part in the Project	
I have read and understood the project information sheet dated 19/05/2020 or the project has been fully explained to me. (If you answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	
I have been given the opportunity to ask questions about the project.	
I agree to take part in the project. I understand that taking part in the project *could* include: ▪ Being interviewed ▪ Taking part in a focus group	
I understand that my taking part is voluntary and that I can withdraw from any part of the study up to a month after the data is collected. I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	
How my information will be used during and after the project	
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.	
I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs.	
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	
I give permission for the anonymised interview, and (if relevant) focus group data that I provide to be deposited in ESRC repository so it can be used for future research and learning	
So that the information you provide can be used legally by the researchers,	
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	

Name of participant [printed] Signature Date

Name of Researcher [printed] Signature Date

Project contact details for further information:

Juliet de Little
Lead Researcher
jmdelittle1@sheffield.ac.uk
Department of Urban Studies and Planning, University of Sheffield, Western Bank, Sheffield S10 2TN

Liz Sharp
First Supervisor
l.sharp@sheffield.ac.uk
Department of Urban Studies and Planning, University of Sheffield, Western Bank, Sheffield S10 2TN

Malcom Tait
Head of Department
m.tait@sheffield.ac.uk
Department of Urban Studies and Planning, University of Sheffield, Western Bank, Sheffield S10 2TN