

# *Going home for tea and medals: how members of the flood risk management authorities in England construct flooding and flood risk management*

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# Going home for tea and medals: How members of the flood risk management authorities in England construct flooding and flood risk management

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## Abstract

The construction of flooding and flood risk management are complex and there is potential for dissonance between individual and institutional understanding and experience of both. In this article, we start by investigating how flooding is managed and the change in paradigm from flood defence to more adaptive approaches, which embed resilience into flood risk management. Using analysis of semi-structured interviews with members of the flood authorities in England, we explore how flood management authorities construct ‘flooding’ and establish that it is often defined by in-the-moment impacts. Whilst these in-the-moment impacts are understood to be devastating, there is less appreciation of long-term human impacts of living at risk of flooding. We uncover how the construction of ‘flood risk management’ by the flood authorities is complicated by factors, such as the construction of resilience, availability of funding, technical expertise and responsibility fragmentation that the Floods and Water Management Act (2010) has created. We conclude that the differing constructions of flooding and flood risk management between flood management authorities in England hinder how flooding is managed. Therefore, we propose that a more nuanced understanding of flooding and flood risk management is essential for effective partnership working between flood risk management authorities and communities.

## KEYWORDS

engage, flood authorities, flood communities, flood risk management, flooding, resilience, UK floods and water management act

## 1 | INTRODUCTION

The constructions of ‘flooding’ and ‘flood risk management’ are complex and yet a collective understanding of these terms is fundamental to ensuring that the

Phiala Mehring: Thames Regional Flood and Coastal Committee.

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organisations and institutions who are involved in managing flooding can communicate and work together effectively, particularly with flood communities.

Our earlier work (Mehring et al., 2018) uncovered differences in how key words associated with floods and flooding were constructed. For example, the dissonance in how ‘partnership working’ is constructed by flood management authorities often leads to flood communities feeling that their voices are not being heard because they do not see their knowledge or experience of flooding reflected in how flooding is managed. As observed by Roth et al. (2017) partnership working appears to frame participation as being upon a level playing field yet in practice there are hidden inequalities of resources and power.

This raises questions around how far these differing constructions of flooding and flood risk management reach and whether over-arching words like ‘flooding’ are constructed in the same way by those who experience it, namely communities living at risk of flooding, and those whose role it is to manage it, namely flood risk management authorities. This article seeks to fill the gap in our knowledge to understand how members of the organisations who manage flooding in England construct flooding and subsequently flood risk management.

What a ‘flood’ is may seem obvious to the casual observer, within this article, we aim to complicate the idea of flooding to reveal how it is constructed differently amongst the flood risk management authority members. We will take you through the development of a thematic understanding of how members of the flood authorities construct and experience flooding and flooding risk management. Before we delve into the constructions of flooding and flood risk management and understanding how they are framed, it is important to first understand how flooding is managed in England and how flood management authorities are organised.

## 1.1 | The paradigm of flood risk management

Approaches to flood risk management and the authorities involved in managing flooding vary from country to country, with the histories, policies and flood risk strategies of each country undoubtedly impacting how members of the flood management authorities’ approach and understand flooding, and what flood risk management is and should be. We demonstrate this by outlining the approaches in England, The Netherlands, Germany and USA, drawing out the similarities and differences

between contexts, as well as making links to their own context from our work.

In England, the current paradigm of flood risk management has developed from an initial stance of flood defence, namely defending productive land from water (Scrase & Sheate, 2005; Werritty, 2006). The substantial flood events in the 1940’s and 1950’s, where a large number of people sadly died (Lumbroso & Vinet, 2011; Scrase & Sheate, 2005), and the subsequent government reviews, shifted the paradigm from flood defence to one of flood risk management with the emphasis on keeping people safe (Donaldson et al., 2013; Nye et al., 2011).

This new approach to managing flooding has, over time, moved to an understanding that flooding cannot be stopped, it can only be managed and mitigated (Brown & Damery, 2002; Scott et al., 2013). Hence resilience has become a key feature of managing and mitigating flood risk and it now plays a dominant role in policy in England (Bottazzi et al., 2018; EA, 2020; Gov.UK, 2016). However, the concept of flood resilience is complex, in particular as ‘resilience’ is framed in many ways with many definitions (Bertilsson et al., 2019; Campbell et al., 2019). In addition, resilience is complicated by geography, finance, type of flooding and changes in patterns of flooding (Bubeck et al., 2017).

This policy shift towards resilience is moving flood risk management to focus more on anticipating, absorbing, and adapting to flood disasters (Bottazzi et al., 2018) where the aim of policy and protocols is for damage prevention, speedy recovery, and preservation of community functionality (Bertilsson et al., 2019; Ritzema & Loon-Steensma, 2018).

It is not just in England where flood risk management is adapting over time, shifting to a paradigm more centred on resilience. For centuries, The Netherlands has relied on protection as a means of managing flooding (Bubeck et al., 2017; Doberstein et al., 2018; Van Loon-Steensma & Vellinga, 2019). Flooding plays a dominant role in the Netherlands with 26% of land located below sea level and a further 29% is sensitive to flooding (Roth et al., 2017). Flood management is predominantly a state responsibility (Wiering & Winnubst, 2017) set at two levels: nationally (Rijkswaterstaat) and through more regional water authorities or boards.

The impacts of development, climate change (Roth et al., 2017) and increased flood risk have led the Netherlands to review how it approached flood risk management, such that at the turn of the century the concept of “room for the rivers” was developed (Doberstein et al., 2018; Hegger et al., 2016) which reframed flood risk management around approaches of avoid, accommodate and retreat. The subsequent Delta Programme further builds on this (Hegger et al., 2016; Zevenbergen

et al., 2018) taking a longer view of the potential impacts of climate change, further shifting the flood risk management to more flexible and adaptive approaches.

In Germany flood risk management is the responsibility of the federal states (Länder) (Bubeck et al., 2017) and in addition to structural flood protection measures, other non-structural approaches are utilised, for example, spatial planning policies. There is also an increasing responsibility of flood-prone residents and business to contribute to damage prevention. Germany takes this approach of resilience a stage further by demanding by law that private adaptation and resilience measures are taken by owners of flood prone properties (Kuhlicke, 2010).

Likewise, USA policy strongly emphasis's individual responsibility (Bubeck et al., 2017). In addition, an important feature of flood risk management in the USA is the federal National Flood Insurance Program (Bubeck et al., 2017).

This journey of policy from defence to flood risk management utilising concepts of resilience and adaptation, has resulted in changes in who is involved in managing flooding. Flood defence was a very technocratic (Penning-Rowsell et al., 2006) and top down paradigm, predicated on the role of the flood risk management authorities who carry out work on the behalf of flood communities. It excluded the participation of flood

communities from its ways of working (Donaldson et al., 2013). By contrast, modern flood risk management aspires to achieve a more integrated approach, one that aims for flood authorities to engage with flood communities (Thaler & Levin-Keitel, 2016).

After the 2007 floods in the UK, the Government conducted a(nother) review of flooding (Bubeck et al., 2017); The Pitt Review (Pitt, 2008), guided the development and enactment of the Floods and Water Management Act 2010 (Gov.UK, 2010) that shapes the current role of flood authorities today. The aim of this Act was to create a simpler and more effective means of managing the risk of flood and coastal erosion.

To simplify flood risk management the Act sets out which bodies are responsible for different elements of flooding effectively laying out who the flood authorities are within England (Figure 1).

The apparent simplicity of the above structure belies the complications, which rise from water knowing no political nor administrative boundaries. Rainwater flows across catchments unhindered by these human constructed boundaries. It makes no deference to being pluvial, fluvial or groundwater in source.

One of the key themes which came out of the Pitt Review (Pitt, 2008) was the need for the Flood Risk Management authorities to work in partnership to deliver more effective flood risk management, which seeks

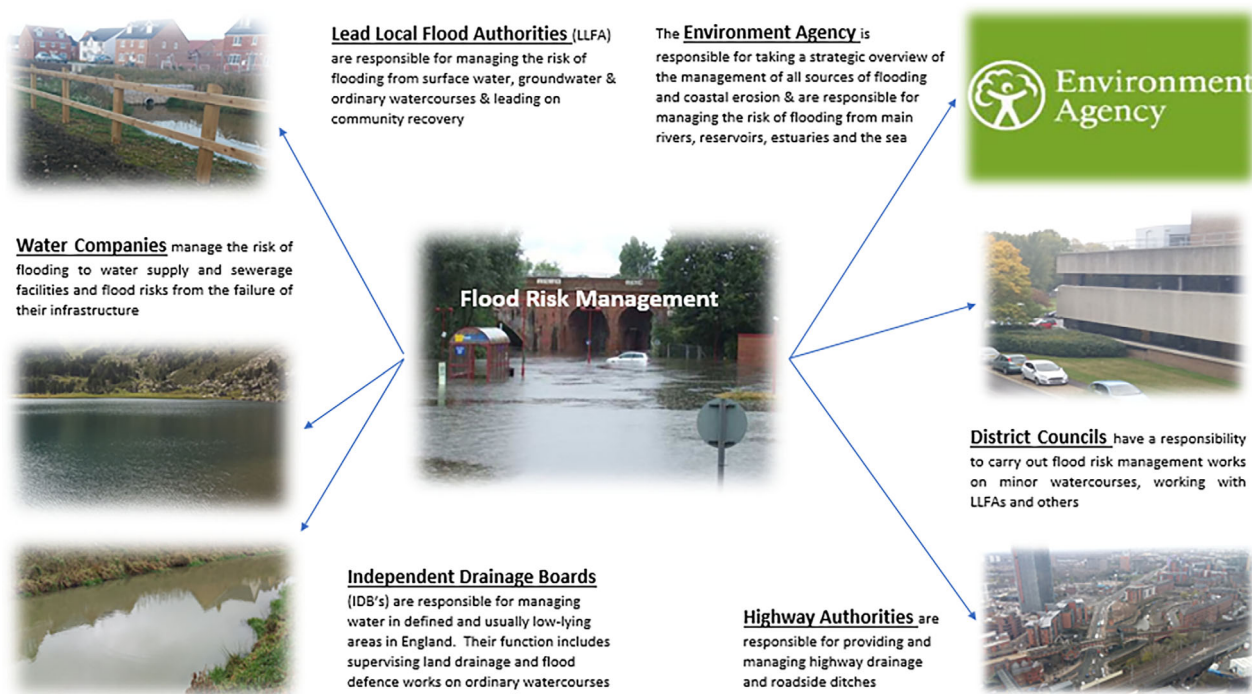


FIGURE 1 The organisations involved in flood risk management according to the Flood and Water Management Act (Gov.UK, 2010)

greater benefits through co-operation. This was duly embedded (section 13: Co-operation and arrangements) into the Floods and Water Management Act 2010 (Gov. UK, 2010). It is worthy of note, that although the Pitt Review did discuss the involvement of flood communities in flood risk management, for example, in identifying the importance of engaging communities and how this can develop connectivity to flooding (Pitt, 2008), and the importance of community knowledge (Pitt, 2008), these elements did not make their way into the final Act. There is no onus or duty for flood authorities to engage, involve or work with the people and communities impacted by flooding.

Nonetheless over the last few decades there has been an increased acceptance of the importance of involving flood communities in flood risk management (Challies et al., 2016; EA, 2020; Evers et al., 2016; Mehring et al., 2018; Thaler & Levin-Keitel, 2016). There is a clear perception that involvement can increase flood communities connectivity to flooding through developing understanding about the sources and pathways of flooding (Ntontis et al., 2019) which can lead to increases in community resilience (Bark & Sutherland, 2019) and preparedness. This more integrated approach to managing flood risk is gaining increasing importance as climate change impacts the frequency and intensity of storms

(Bark & Sutherland, 2019; CCC, 2016; Gov.UK, 2016; Thorne, 2014).

## 1.2 | The complexity in the construction of flooding

Flooding has many constructions: a physical construction, water where it should not be; an experiential construction, living through water entering a person's home; an emotional construction, the fear of rain, anxiety when leaving your home alone; a financial construction, no money to repair domestic damage; a climate change construction, the risk of increased flooding; amongst many, many others. An individual's construction of flooding is going to be defined through their experience of it.

Some of the above constructions are framed around 'in-the-moment' events, whilst others are related to long-term human impacts of flooding as illustrated in Figure 2. Buildings dry out and can be recovered, whilst the more human impacts of flooding, the psychological, the emotional, the financial, the impact on relationships, can and do go on for years (Walker-Springett et al., 2017). If flooding is constructed differently within and between the authorities who manage flooding this could readily hinder the communication and engagement that is

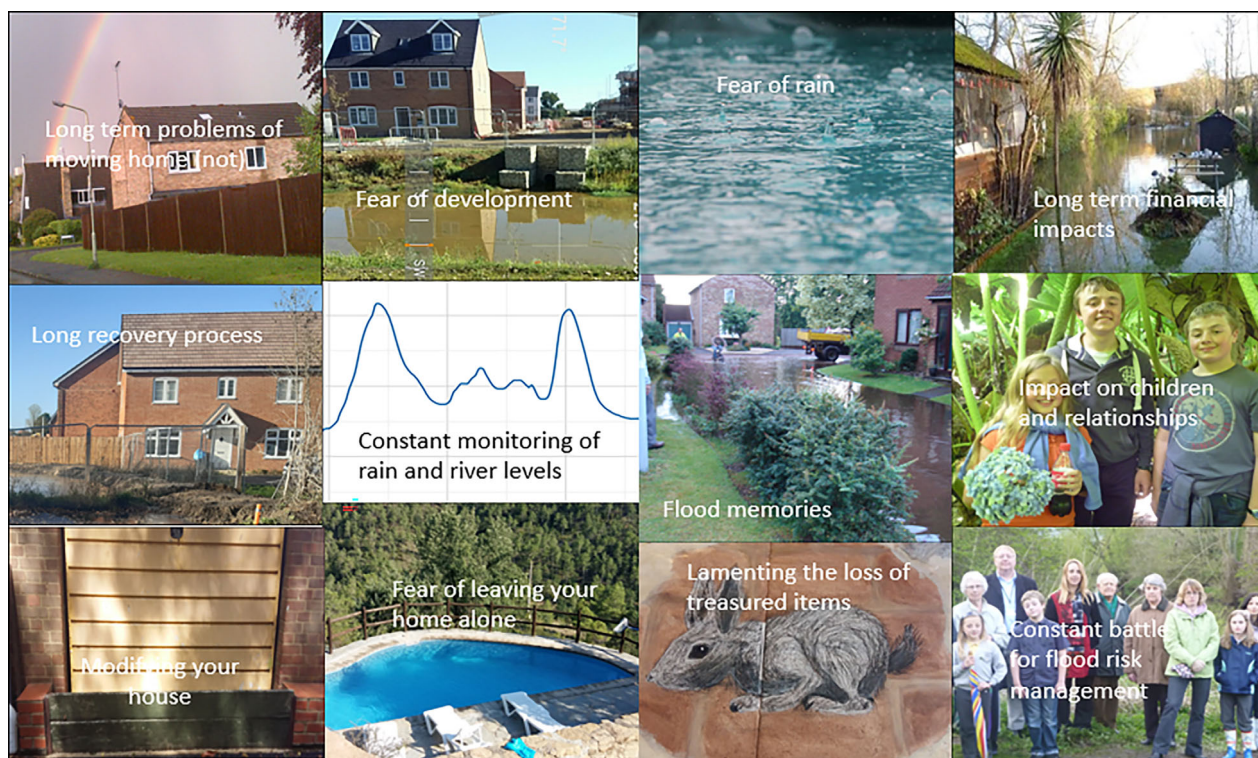


FIGURE 2 Some of the long-term human impacts of flooding

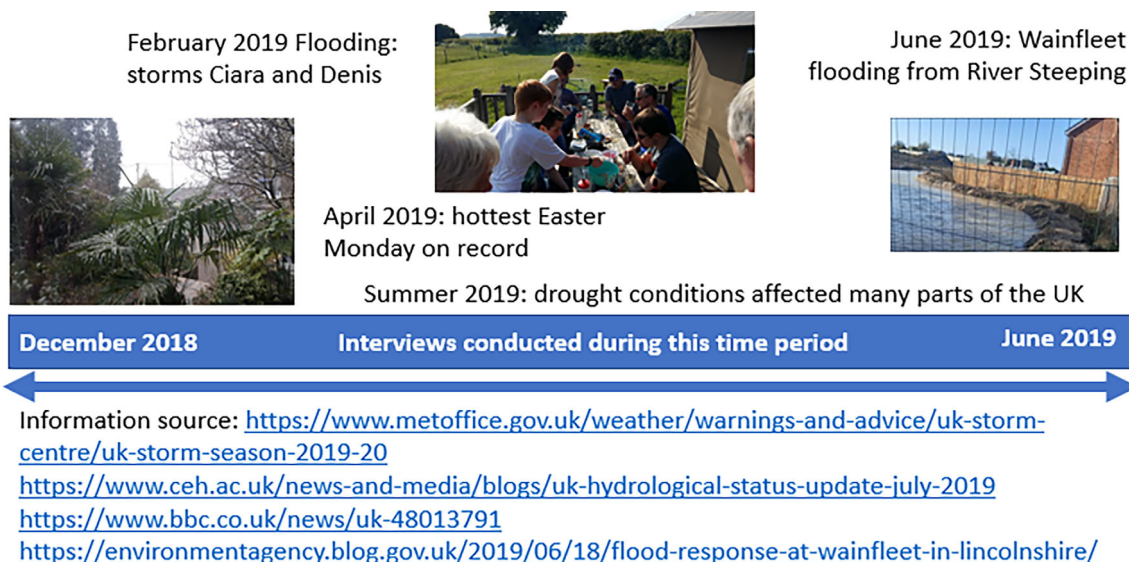


FIGURE 3 Flood events timeline during interviews

required for effective flood risk management (Thaler & Levin-Keitel, 2016) potentially leading to conflict between the very groups, organisations and people that should be working closely together to manage flooding in an integrated manner (Roth et al., 2021). It is therefore important to understand how flooding is constructed by members of the authorities who manage flooding in England and identify any differences between the over-arching authorities. This article aims to fill this knowledge gap.

## 2 | RESEARCH APPROACH AND METHODS

### 2.1 | Data collection

The data for this research was gathered through 30 semi-structured interviews with members of flood Risk Management Authorities from across England: 13 from the Environment Agency; 9 from LLFA's (including interviewees from Highways departments, or Internal Drainage Boards [IDBs]); and 8 from Water Companies. All interviewees had professional roles which required engaging and working with flood communities. For reasons of confidentiality, the geographical location of the interviewees will not be disclosed. The interviews were conducted from December 2018 running through to June 2019, which covered the flooding from Storms Ciara and Dennis (Figure 3).

The interviews were set against the backdrop of a substantial consultation period for the Flood and Coastal Erosion Management (FCERM) National Strategy which led to the publication of the National Flood and Coastal Erosion

Risk Management Strategy (EA, 2020) for England on 14th July 2020. This consultation will undoubtedly have had an influence on some of the interviewees with a number of them making direct observations about the consultation.

### 2.2 | Interview questions

The interviews were framed around questions designed to access experiences and constructions of flooding and flood risk management such as:

- What is your experience of flooding?
- How would you describe flooding to someone who does not work in flood risk management/live at risk of flooding?
- What does flood risk management mean to you?
- What is working well in flood risk management?

Thematic analysis was used to understand and interpret the information gathered in the interviews. This approach enabled the layering of meaning to understand sense and themes within the sections/sentences and within the information as a whole (Kitchin & Tate, 2000). Care was taken to avoid identifying themes purely based on frequency of use by an individual interviewee, as this runs the risk of biasing themes in the full analysis that might only be relevant to, although frequently mentioned, by a few individuals.

### 2.3 | Thematic framework

The entire thematic framework consisted of 142 sub-themes which sat under 17 over-arching themes (Table 1).

TABLE 1 Over-arching themes (alphabetic)

Communities/residents as customer—identities from different perspectives
Development (housing)
Different meaning of words
Engagement
Impact of flooding
Knowledge capture
Make-up of flood authorities
NFM, land management
Perception of risk
PLP/household level protection
Risks of flooding
Secondment role/career advancement/personal change
Sense of home
The nature of community
Trust
What is FRM
Comment idiosyncratic to individuals

TABLE 2 Interview analysis sub-themes under ‘The impact of flooding: how flooding impacts communities’

Communities suffering repeated flooding/just getting back into their homes when flooding again
The emotion of flooding: the impact of rain/fear of rain
Anger around FRM/about flooding/venting
Frustration: of not being able to do anything/wanting unrealistic solutions which cannot be funded/frustration at not making progress
The mental impact of flooding/PTSD/people killing themselves
The disruption/having to move out/life in caravans/the long recovery period afterwards

The individual sub-themes added greater detail to the meaning of the over-arching themes (Bark & Sutherland, 2019). For example, the ‘impact of flooding’ had 19 sub-themes, of which examples are listed in Table 2.

### 3 | WHAT IS FLOODING AND FLOOD RISK MANAGEMENT TO MEMBERS OF FLOOD RISK MANAGEMENT AUTHORITIES?

In this section, we start by deconstructing flooding to appreciate the balance between the comprehension of flooding as an ‘in-the-moment’ impact versus the long-term human impacts. We gain an understanding of the

role that personally experiencing flooding plays in the construction of flooding for members of flood management authorities, before moving on to flood risk management and gaining an understanding of how expertise, funding and responsibility fragmentation (Hegger et al., 2016) impact the construction of flood risk management. Finally, we unpack the differing constructions of flooding and flood risk management amongst the differing flood authorities.

#### 3.1 | Flood authority perceptions of what flooding means to those who flood

The interviews conducted for this research highlighted that the in-the-moment impacts of flooding are understood to be devastating by the flood authorities.

So, it’s devastating. I think that word really, sums it up, you really need to get under the skin of devastating [Interviewee-FA13].

Including the impacts immediately following a flood.

XXXX (names individual) describes about how the family had to go to Sainsbury’s, to get a shower, to wash, to use the loo [Interviewee-FA11].

Bound up in this understanding of the ‘in-the-moment’ impacts of flooding, is the knowledge that many of these impacts can only be fully understood by witnessing them. That is, the lived experience of flooding or being involved in a flood response is critical to understanding the emotional impact of a member of the public’s home being flooded.

I’m probably one of the only people, well myself and [named individual] who’s involved and he’s a highways drainage person..... We’re some of the only people who’ve got that direct experience of going out to people’s properties after a large scale flood event or even a small scale flood event..... that’s no fault of any of the other officers and no fault of their own, we just haven’t that than major flood event like 2007 and 2012, two pretty bad years [Interviewee-FA21].

The comprehension of the devastation of flooding extends to some understanding of the stresses and strains of the long-drawn-out process of recovering from flooding. Yet this understanding is rather one



dimensional, framed around the physical elements of recovery and less so the emotional and psychological components.

It's awful, its devastating, it takes months to dry out and the damage is immense, that's quite worrying. [Interviewee-FA16].

These physical in-the-moment discussions dominated much of the understanding of what flooding is from a flood authority perspective.

However, within some flood authority interviews there was some appreciation of the mental health impacts of flooding, the lived experience of flooding. These were understood as ranging from the fear of leaving your home to the constant need to track the weather.

It creates a core group of avid weather watchers [Interviewee-FA27].

This guy with, I think he said 23 weather apps on his phone [Interviewee-FA15].

So, you know they're very nervous about leaving the house. They'd be nervous about going on holiday [Interviewee-FA19].

These are all symptoms of an individual feeling the stress of facing something over which they have no control (Gutteling et al., 2017). Whilst to the outsider, these behaviours may seem mal-adaptive and at worst pathological, they provide a means for the individual to take back some control, to increase their coping capacity (Wamsler & Brink, 2014).

The need for these types of coping behaviour is not well understood by those who do not flood, and the 'irrationality' of these behaviours is often perceived as not being helpful, that they cannot stop flooding and potentially only act to intensify feelings of stress.

I am not criticising the guy I am just sort of saying how much time it takes you to go through 23 apps. .... it is almost addictive and there are people that are, how can I put this, that are so obsessed with the flood action group that I am not sure that it is that healthy for them because they are just obsessing on the subject [Interviewee-FA15].

Whilst other flood authority interviewees understood a little more. They appreciated that the stress and strains of

living at risk of flooding are hard to comprehend without fully understanding the situation.

I think we are too quick to judge and say, you know, that, that's irrational and that's it. But you don't, none of us know the back-story what they've been through to get them to that state where that it is normal for them [Interviewee-FA8].

### 3.1.1 | Moving to understanding long-term impacts

There is evidence from our research that personal experiences/witnessing of flooding can alter and morph an individual's construction of flooding leading to a better more nuanced understanding of the more long-term impacts. For example, one of the interviewees had their construction of flooding altered by visiting a flooded home:

I came to a place, a remote farm, a house next to the river XXXX and hung up on the washing line were individual photos, each one of them with an individual peg on it, drying [Interviewee-FA22].

Being faced with such a visceral depiction of what flooding is, led the interviewee to reframe their construction of flooding.

When the blue lights turn off and the river levels dropped off to a benign level, it's very easy to think that the flood has finished. It hasn't, has it? Hydraulically it has finished, you know, on, you know, on our data screens it might have finished. But it's only just beginning for flood victims [Interviewee-FA22].

Here the construction of flooding moves from a simple framing of hydraulics to a much more complex understanding that flooding has very human impacts which linger long after the flood waters have receded. This change in the construction of flooding was only achieved through a lived experience of flooding.

This demonstrates how a more nuanced understanding of what flooding is, is possible when members of flood risk management authorities have direct experience of flooding, for example, by visiting flooded homes,

talking to people whose homes have flooded or being directly involved in the recovery process.

### 3.1.2 | Beyond 'In-the-moment' impacts

Some flood authority interviewees understood that flooding extended beyond the immediate immersion of the home in water and that the stresses, strains, emotional and psychological impacts of flooding went through the recovery process and continued into life after flooding. For example, that some people are so terrified of leaving their homes that they do not go on holiday, or they very closely monitor the 'home' situation whilst on holiday.

I mean it does affect people, people are afraid to leave their home as consequence.... it does affect people's enjoyment of their holidays, and in fact whether they'll go far on that holiday and things like that. You know, they are, they keep watching, they're on holiday, but they're watching the weather back home [Interviewee-FA19].

### 3.1.3 | What is flooding to the flood authorities?

For members of flood management authorities in England, flooding is regularly constructed as an in-the-moment event, which often excludes the potential for long-term human impacts such as the stress of having to live with the possibility of flooding again. This, despite the fact that it is now recognised that Post Traumatic Stress Disorder (PTSD) is quite common after flooding (Waite et al., 2017). Through the researcher's own experience of having flooded friends with PTSD, they have witnessed people whose lives become dominated by behaviours, which appear irrational to those who have not experienced their home flooding.

## 3.2 | What is flood risk management?

The interviewees construction of flood risk management was more individualised, shaped not only by the flood authority that the interviewee worked for, but also through the personal experiences of those interviewed and linked to the individuals' work life in the days or weeks running up to the interview. Here their work biographies and the emotions of past experience readily influence their construction of flood risk management (North & Nurse, 2014).

In some instances, there were events that stuck in the memory of the interviewee. For example, several interviewees talked about engagement that had gone terribly wrong. One interviewee referred to a public meeting where members of the local community demanded a very confrontational approach to the meeting with a top table of flood authorities and an audience of locals who had flooded. Here, flood authorities felt a sense of confrontation and anger from flood communities, and a sense of being attacked or the need to defend themselves.

it's a lynching, they want to give you a lynching, you know, and they want it to be very public [Interviewee-FA8].

This can have the effect of altering approaches to community engagement and hence the part that community engagement has in flood risk management. Many public meetings are often now structured as drop-ins to reduce the risk of confrontation. The danger here is that the construction of flood risk management is moving away from the important holistic approach required to manage a systemic complex risk like flooding (Castaños & Lomnitz, 2009; Renn, 2015) to more individual approaches.

### 3.2.1 | The role of 'expertise'

Flood risk management is also frequently constructed around technical expertise (Wiering & Winnubst, 2017), where the expertise of the flood authorities takes precedence. The old technocratic approaches to managing flooding can still retain a firm grip on ways of working. Some interviewees understood this was not a positive stance to take, with the humorous sarcasm in this comment leading to the title of this article.

we are the experts. This is what we'll do for you. That's brilliant isn't it. Yeah. Are you happy with that, thank you very much? We'll go home for tea and medals.....

Defining oneself as 'the expert' can lead to flood risk management projects being designed without any engagement with the local community (Barnes & Schmitz, 2016). Walker et al. (2006) liken this to a 'rubber-stamping' of approach by government agencies, in that they determine what is required and what is 'good' and 'necessary'.

Thus, consulting the local community becomes more about informing, telling people what you, as the flood

authority, as an expert, are going to do to for them (the community) on their behalf.

I think we often use the word, for example, consult when we mean inform [Interviewee-FA18].

These technocratic ways of working drive knowledge and power hierarchies (Mehring et al., 2018; Thaler & Levin-Keitel, 2016) and there are risks associated with this approach, not least the exclusion of local knowledge which could be vital to the success of the project, for example, that dropped kerbs direct water in a direction that models do not predict which is well understood by the local community but not the models. In addition, the exclusion of communities from decisions that will affect and impact their lives (Yamamoto, 2012) presents a risk to effective flood risk management. Here flood risk management is framed around technocratic ways of working which exclude community knowledge and experience.

### 3.2.2 | The role of funding

How flood risk management is funded, is clearly important, never more so than during a period of national financial constraints. Without funding, infrastructure cannot be built, community groups cannot be supported, and modelling cannot be run. Funding is not just about who pays for what, it is also an important element in the construction of flood risk management. No matter what the flood authority interviewees thought flood risk management should ideally be, almost everyone felt that it was shaped, if not hindered by a lack of funding.

I think it just always comes down to funding at the end of the day. Yeah. That, that's always always a really, really big challenge. [Interviewee-FA29].

This in term can lead to the 'fobbing off' of problems to avoid paying for the resolution of them.

It's people again, organizations not wanting to put our hands up and admit to the issue because there's a budgetary impact of it [Interviewee-FA21].

The lack of funding is perceived to be a real problem in implementing flood risk management schemes and projects. It is experienced as the flood authorities being stymied in how, and if, they can get funding for projects and funding to engage with flood communities, which can lead

to very guarded approaches to communities. This creates conflict amongst the various flood actors (Thaler & Priest, 2014) and it can result in the flood authorities being very cautious about flood risk management and feeling the need to manage the expectations of flood communities. Many of the flood authority interviewees felt that it is hard to talk to a community about reducing their flood risk when they are worrying about getting funding. Better to manage expectations that nothing may happen than promise a solution only to find no one will pay for it.

And there's a scheme that just doesn't stack up financially, which is really difficult to tell people just doesn't fit, square pegs in round holes and all of that [interviewee-FA13].

Here, the construction of flood risk management is very much shaped by the lack of funding.

We've hit a point I think where it's now become, um, it's not cost effective to deliver, to fix flooding anymore [Interviewee-FA28].

### 3.2.3 | Responsibility fragmentation

One of the objectives of the Pitt Review was to simplify flood risk management. Yet many interviewees verbalised a concern that current flood risk management policy creates additional complexity through the fragmentation of responsibility. With a systemic risk like flooding there is rarely a single problem to be solved. Splitting responsibility amongst the flood authorities creates silos leaving elements of flooding not clearly owned by a flood authority, resulting in situations where there is no apparent ownership of them.

And uh, it being so fragmented sometimes, no one actually, um, um, grabs it as an issue and says, we're going to take the, um, you know, we're going to, we're actually going to run with this. So, I can appreciate that completely. And, um, as a, um, somebody who's worked in flood risk management it also is a frustration [Interviewee-FA14].

Rather than having one organisation or government department responsible for flooding, the Floods Act broke down responsibility according to the source of the flooding. From the interviews we heard that far from increasing the focus on responsibility it diluted it. One of the impacts of this dilution is that flood problems can be 'fobbed off' between organisations.

When you see some flooding out in your road and you're a normal resident who has never experienced flooding before. You have absolutely no idea who is responsible. And the agencies can justifiably fob you off on each other for years and years and years and years because the water company will say 'the road is flooding' we are a sewage company we don't have a connection. The Highways agency are saying the road is flooding but it (rain) can't get into the sewer. And the environment agency will say, well, just because the sewer is full doesn't mean you shouldn't have an alternative way to discharge. Yeah. It's a little bit rubbish, I think because essentially no one's responsible. I think it's a highly fragmented legislated framework [Interviewee-FA24].

Fragmentation of responsibility leads to problems 'slipping through the net' and hence poor flood risk management (Challies et al., 2016). A systemic risk like flooding requires a holistic approach (Renn et al., 2011), one that considers all facets of flooding from source, pathway through to impact (and the very human impacts of flooding). Here flood risk management is framed around the complexity of navigating who is responsible for what.

### 3.2.4 | What about resilience?

Given that resilience has become a key theme of current flood risk management policy within and beyond the UK, one would therefore have expected that a holistic construction of resilience would feature heavily in the semi-structured interviews. However, this is not the case. Whilst 20 of the 30 interviewees did use the word 'resilience' at least once, these mentions were often associated with a singular dimension of resilience, for example, property level resilience, being part of a resilience team at work or simply used in such a manner where it is hard to pin down exactly what the individual meant by the term resilience.

From all the mentions of the word resilience, over half were from members of the Environment Agency. There is a clear sense that the word 'resilience' is now embedded into the language of the Environment Agency, but that it might not always hold practical understanding. It is worth noting here, these interviews were carried out before the launch of the Environment Agency's new Flood Risk Management Strategy (2020), which represents another shift in focus towards resilience.

Resilience is complex, with a range of definitions and meanings, this is clearly reflected in the way that the interviewees talked about resilience. Resilience was used in a somewhat arbitrary and very diverse manner in many of the interviews.

We look after the flood warning service. So, we look after changing triggers, changing extents, making sure that they are at the right level, trying to get new telemetry gauges to create new flood warning areas and making that the best it can be. And then we deliver, um, resilience as well [Interviewee-FA1].

And for some interviewees the only mention of resilience in their interview was in relation to a team name only.

I worked in the flood resilience team [Interviewee-FA8].

I took on an assignment in the flood resilience team as an engagement advisor [Interviewee-FA12].

At a time where climate change impacts require a unified response to flood risk management, it is disconcerting, although understandable given the global lack of consensus about what resilience is, to find that the construction of resilience is so fluid and meaning different things to different people. This was summed up well by one of the interviewees.

I think when, you know, when we talk about resilience as an organization and we're very, we're very sort of verbal, talk about, you know, can we improve resilience for this. Actually, it doesn't mean anything to people is, it's just another word really at the end of the day [Interviewee-FA12].

## 3.3 | The differing constructions of flooding and flood risk management between the flood risk management authorities

Our research interviews identified themes around the construction of flood risk management that run across and through the flood authorities with the emphasis on various elements changing for different organisations. The Environment Agency responses to the interview

questions put more of an emphasis on themes like the practicalities of flood risk management; the need for a holistic approach; the need for people to be aware of their flood risk; and the impact that the lack of funding has on flood risk management. The human impacts of flooding had lesser prevalence in these interviews and when they were discussed, the discussion was often framed around the emotional response to rain and to flooding that is, in-the-moment rather than lifelong impacts. It is not true to say that this is the case for every Environment Agency individual interviewed. A number of individuals understood very well the long-term human impacts of living at risk of flooding and articulated this well.

These perspectives challenge the outputs of the Pitt Review and the resultant Flood and Water Management Act (2010) and questions whether the Environment Agency work and their desire to engage with flood communities is stymied by national policy and how the Environment Agency is funded.

For the LLFA's the human impacts of flooding had as much importance to the interviewees as the lack of funding. Other important themes are framed around engagement, working together, communication and partnership working. This reflects the differences in the way that the Environment Agency and LLFA's work. LLFA's are, by their very role, more embedded into local communities. They have 'constituents' with whom they work, their role is for the effective management of the borough/region and the people living within it. It is possible that it is this proximity to the communities that engenders a more community and partnership focus with an emphasis on engaging with their local communities. This, of course, is not the panacea for the perfect flood risk management approach, LLFA's themselves encounter and create flood risk management problems. However, it does offer some opportunity for understanding what does work and which ways of working could be emulated elsewhere.

For the water companies the picture was more complex. This complexity could, of course, come from the fact that as companies with shareholders it is their boards that set the dynamic for the company and the business goals. And ultimately, the board along with OFWAT determinations, which determines what can and cannot happen or what can or cannot be funded, all set within the context of business interests. This will inevitably impact ways of working.

Nonetheless, there were still common water company themes. Every person interviewed from a water company spoke about engagement as a means of getting a message across, for example, 'bin it don't flush it', educating customers not to flush items down their toilet which should

not be put down the toilet. This came across in interviews often as customers causing self-inflicted flooding.

80% of that 98% (flooding incidents) are due to self-inflicted, so putting in rags or wipes or that sort of thing which creates a blockage [interviewee-FA27].

The use of the word customer was also interesting, if not obvious. Occasionally in Environment Agency and LLFA interviews communities were referred to as customers, but because of the business nature of the water companies, they are dealing with customers and duly call them so. The best example in this research is the concept that customer is 'King', where individual customer complaints often result in the company having to respond quickly to ad-hoc events and this can result in 'knee jerk' responses. Providing excellent customer service is one of the four key themes of OFWATs, 2019 price review (PR19) (OFWAT, 2019). Therefore, if a customer makes a complaint an urgent response is required, and this can take precedence over more long-term flood risk management plans.

I can say a lot of challenges internally from many directors about this customer is King and where we want all that PR when we're trying to keep under the radar, uh, not get bad press [interviewee-FA28].

Because at the moment we're rated based on when a customers got a problem with us, how do we react basically [Interviewee-FA28].

Another interesting theme which came through a number of Water Company interviews was that Water Companies can feel that they are being portrayed as the 'bad guys' of flooding.

..... I'm sure we're still seen as a bit of a bad guy [Interviewee-FA27].

Sometimes there was a perception that other flood authorities think water companies have lots of money available and therefore should be footing the bill.

uh, and they also don't understand what companies can do and what they can't do in terms of what they spend the money on. You know, if we spend water bill payers money, we have to spend it in a way that benefits

customers in terms of the use of our assets. We can't just get someone money cause it feels like a jolly nice thing to do. They don't even associate what we do with capped limits [Interviewee-FA27].

Water Companies also perceive that their proximity with customers leaves them exposed to complaints which may not be their fault simply because they are working face to face with customers.

For Water Companies, flood risk management is constructed around business requirements and the need to keep their customer happy and not making complaints.

### 3.3.1 | Differing constructions

These differing constructions of flood risk management amongst the flood authorities can readily add to the complication of responsibility fragmentation by making communication more complex. If you consider the situation where a flood risk management partnership between flood authorities is being set up to manage flooding effectively. If one of those partner flood authorities constructs flood risk management through the development of engineering schemes utilising their own expertise and another partner authority constructs flood risk management as working together to pool knowledge, looking at all options including natural flood management and developing a collaborative proposal, differences will inevitably occur. This could readily lead to a situation where each authority and other flood actors, feels that the others are not 'doing' good flood risk management because it does not match their own construction of what flood risk management is.

## 4 | HOW IS FLOODING AND FLOOD RISK MANAGEMENT CONSTRUCTED BY MEMBERS OF FLOOD MANAGEMENT AUTHORITIES IN ENGLAND?

The construction of flooding and flood risk management by members of the English flood authorities is complex; heavily framed around in-the-moment issues and impacts. Although these constructions contain some understanding of the temporal elements of flooding, the human long-term impacts of living at risk of flooding are not fully understood yet and therefore play a limited role in the construction of flooding and flood risk management. Whilst the fear of rain and the associated behaviour to monitor rainfall might be recognised as a symptom of living at risk of flooding, the reasoning

behind why this behaviour occurs is not well understood by the flood authorities. It is troubled by a perception that these anxiety-inducing reactions are making the situation worse and ideally the individuals at risk of flooding should stop doing it.

If the flood authorities were to gain a better understanding of the visceral, emotional and psychological causes and impacts of these behaviours and build these concepts into their construction of flooding, it would enable them to better communicate with flood communities and each other, relate to the flood reality communities are living through and facilitate partnership working. All of which could assist in better management both of flooding and the long-term human impacts of it.

It is important to observe that whilst 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. This juxtaposition of the institutional function of flood risk management compared to the personal experience raises questions about how these two influences could (or should?) be balanced to optimise effective flood risk management or whether this undermines the practice of effective flood risk management.

If the Flood and Water Act sought to simplify flood risk management through making flood authorities responsible for managing specific elements of flooding, it has failed to do this. The flood risk management structure it imposes on the flood authorities' fragments responsibility, it creates disconnects between the flood authorities and it fails to recognise that flooding and flood risk management are constructed in completely different ways amongst the various flood actors.

The results of this research identify the need to acknowledge that flooding and flood risk management are complex in their construction and mean different things to different people, that is, there is dissonance in their constructions. From this acknowledgement and understanding can come equitable and effective partnership working. Flood authorities and other flood actors need to work together and with flood communities to develop constructions of flooding and flood risk management that are meaningful and accessible to all involved. Top-down approaches to community engagement need to be addressed and converted to more bottom-up ways of working that connect and resonate more with communities. Our research suggests that this is a priority and something that requires further research.

In addition, the complication around 'what is resilience' from a flood authority perspective risks rendering this important concept as arbitrary, again meaning totally different things to different people. As already acknowledged, diluting resilience through a lack of clear

construction and definition is dangerous in a world where climate changing is seriously impacting flood risk.

This research also highlights the importance of the flood authorities and other flood actors understanding 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.

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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