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Towards Equity? Advancing Rural Consideration in Flood Risk Management

Running Title: Advancing Rural Consideration in FRM

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Data Availability Statement:

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

Towards Equity? Advancing Rural Inclusion in Flood Risk Management

Abstract:

Flood risk management (FRM) in England & Wales predominantly follows a utilitarian approach guided by cost-benefit analysis and a corresponding focus on urban areas and communities. This approach has been criticised as being unjust, neglecting vulnerabilities that cannot be readily monetised. It has also resulted in some of the most vulnerable flood-affected communities being excluded from FRM provision. This is especially pronounced in the rural context. There is an irony that rural communities find themselves overlooked in FRM despite many contributing to the protection of urban settlements. In line with increased research attention relating to social injustices in FRM and policy calls for more 'equitable' FRM, greater consideration of rural flooding is required. Using the River Severn catchment as a case study, this paper uses a questionnaire survey of 176 rural residents to gather perspectives on their engagement with FRM agencies. Based on their response, their views were put to FRM agencies active in the region through a series of interviews. The perspectives of rural communities and FRM organisations are combined to establish the challenges and opportunities in achieving just consideration of rural communities in FRM. The findings not only highlight the need for a more inclusive approach to FRM in the River Severn catchment but also offer valuable lessons that can be applied to other rural areas in the UK and beyond.

Key words: Rural, Flooding, Flood Risk Management, Justice, Community.

1. Introduction:

Globally, flooding is responsible for significant social and economic losses (Kundzewicz *et al.*, 2014; Morrison, Westbrook & Noble, 2018). In the United Kingdom, annual flood damages amount to approximately £1.3 billion (Black, 2022) with projections suggesting a rise to £27 billion by 2080, assuming no further mitigation. The impacts of flooding are non-uniformly distributed, instead, exhibiting considerable social and spatial variability.

Recent data from the Environment Agency (2020) reveals that individuals residing in low-income households are particularly susceptible to flood-induced impacts. Spatially, distinct variations in flood impacts exist between urban and rural areas. Urban areas of the UK experience the largest flood associated costs with 75% of Expected Annual Damages (EAD). However, in the context of socially vulnerable neighbourhoods, flood risk in rural neighbourhoods is considered significant accounting for 45% of the £47 million EAD and 30% of the people exposed to flooding (Sayers, Penning-Rowsell & Horrit, 2018).

The consideration of UK based rural communities in flood research remains limited, despite Environment Agency calls for greater research focus on the social impacts of flooding in a rural context (see Twigger-Ross, 2005). Sayers, Penning-Rowsell & Horrit (2018) find that flood risk is highest in deprived socially vulnerable communities, which includes many dispersed rural communities. However, the current cost-benefit approach to Flood Risk Management (FRM) eligibility accommodates only those benefits and costs which can be easily monetised. Consequently, those most vulnerable often fall outside of cost-benefit criteria, which casts doubt on the extent to which FRM can be considered as socially just (Sayers, Penning-Rowsell & Horrit, 2018). In the context of FRM, recognition justice involves understanding and addressing the specific vulnerabilities and capacities of rural communities, ensuring that their voices are heard (Dewa *et al.*, 2022), and their contributions recognised.

This paper considers the extent that rural communities feel involved in FRM deliberations whilst investigating the scope for their increased involvement, in line with policy calls for greater social justice in FRM (Eakin *et al.*, 2022). The evolution and current state of rural FRM

in England & Wales in relation to social (in)justice is reviewed before a case study of the River Severn catchment is presented. Initially, a questionnaire survey was conducted among 176 rural residents to gather perspectives on their engagement with FRM agencies. Subsequently, these findings were complemented by interviews with FRM organisations active in the region. By combining the perspectives of rural communities and FRM organisations, this study aims to establish the challenges and opportunities in achieving just consideration of rural communities in FRM.

2. Social Justice & Spatiality in Flood Risk Management

Taking an international perspective Thaler & Hartmann (2016) emphasise the contested nature of justice in FRM. In human geography it has long been acknowledged that social injustices have contributed to spatial inequalities (Israel & Frenkel, 2017). Considerations of social & spatial justice have predominantly focussed on urban areas, however contemporary rural geography scholarship argues that media and political discourses have obscured the situation of rural communities (Woods, 2023) in relation to topics such as FRM. Consequently, understandings of rural perspectives on FRM remains limited, hindering efforts to promote greater community engagement – an important aspect highlighted in contemporary FRM discourse advocating for increased public participation (Wehn *et al.*, 2015).

2.1. ‘Fair’ Flood Risk Management:

Since the early 2000s, FRM has undergone ideological transformation (Johnson, Tunstall & Penning-Rowse, 2004; Johnson, Penning-Rowse & Parker, 2007). Notably, there has been a shift from a narrow focus on urban-specific flood defence schemes towards a more comprehensive approach that emphasises managing “both flood probabilities and consequences” (Johnson, Penning-Rowse & Parker, 2007, p.374). Table 1 summarises the evolution of flood policy since the 1940s:

Table 1: Changes in flood policy. Information retrieved from Johnson, Penning-Rowse & Parker (2007)

| Philosophy | Rural Land drainage | Flood defence | Flood Risk Management |
|-----------------|--|---|--|
| Period | 1940's – 1970's | 1980's – 1990's | 2000 - present |
| Policy position | Improve and protect agricultural land from flooding. | Defend people and property from flooding. | To manage flood risks equitably and in accordance with principles of ecologically sustainable development. |

Current policy position implies that floods should be managed equitably. In line with current FRM policy, notions of social (in)justice have been considered in understandings of FRM, with three theoretical standpoints dominating (Johnson, Penning-Rowse & Parker, 2007; Penning-Rowse, Priest & King, 2016; Sayers, Penning-Rowse & Horrit, 2018; Thaler & Hartmann, 2016):

- **Equality (egalitarianism)** – The equal treatment of all in FRM where every individual has equal opportunity to have their flood risk managed and have equal voice in decision making (Kaufmann, Priest & Leroy, 2018). Dutch flood risk management seeks to incorporate egalitarian principles through a bottom-up approach (Thaler & Hartmann, 2016). This approach is considered unachievable in the UK owing to the already significant investment in urban structural defences (Johnson, Penning-Rowse & Horrit, 2007), implying equal structural investment in rural areas would be unrealistic.

- **Maximin rule (Rawlsian)** – The prioritisation of those worst off, and in the context of FRM, the targeting of resources to those most vulnerable (Kaufmann, Priest & Leroy, 2018). This approach is considered more just egalitarianism as it seeks to prioritise those least advantaged (Sayers, Penning-Rowsell & Horrit, 2018; Thaler & Hartmann, 2016). In England & Wales the Flood Defence Grant in Aid (FDGiA) formula is designed to offer preferential weighting to schemes which reduce the impacts upon deprived households or those suffering more nuanced vulnerabilities, such as mental health challenges, although such adjustments rarely translate in practice (Sayers, Penning-Rowsell & Horrit, 2018).
- **Maximise utility (utilitarianism)** – Support is extended to those members of society who yield the most substantial advantage, contributing significantly to the overall welfare of society. This theory is underpinned by a cost-benefit approach which overlooks the complex externalities and the wider impacts of flooding beyond financial. The justice principle of utilitarianism currently dominates FRM decision-making throughout Europe (Thaler & Hartmann, 2016) and has contributed to the prioritisation of urban areas (Kaufmann, Priest & Leroy, 2018).

The current dominance of utilitarianism as the primary justice principle informing the provision of FRM in Europe has contributed to social and spatial injustices levied at those who do not yield the most substantial economic advantage. Although those who have the most to offer society are unquestionably deserving of protection, many of those most vulnerable often play a role in providing this protection (Thorne, 2014). Nowhere is this more evident than in rural areas of England & Wales.

2.2. Flood policy in a rural context:

The inclusion and consideration of rural areas in flood policy is complex and has been subject to change over time (Table.1). Between the 1940's and 1970's, flood policy in England and Wales was guided by the philosophy of rural land drainage. During this period, FRM in rural areas focused on land drainage and construction of levees. This was to ensure the protection and productivity of food producing agricultural land in the post-war period. During this period, flood policy was driven purely by a need to maximise agricultural output.

During the 1980's, flood policy in the UK changed course and rural consideration declined. Instead, the philosophy of 'flood defence' dominated and led to significant investment in structural defence measures in urban areas. This shift in focus was instigated by the increasing prominence of urban regeneration and a declining agricultural sector (Johnson, Penning-Rowsell & Parker, 2007).

The greatest change in rural flood policy consideration came during the 2000s with the emergence of the modern flood risk management (FRM) paradigm. This contributed to the promotion of non-structural measures such as Natural Flood Management (NFM) as a means of flood mitigation (Morris, Beedell & Hess, 2016) which in turn increased the scope for rural involvement in FRM. However, unlike post-war rural inclusion in flood policy, rural involvement in contemporary flood risk management is largely fulfilled through a protector capacity, supporting the mitigation of flood impacts in urban areas (Thorne, 2014).

2.2.1. Flood Risk Management in rural areas.

Many urban dwellers of the UK now believe rural areas and communities should be sacrificed if it results in reduced flood risk in urban areas (Thorne, 2014). NFM measures promote the use of rural land as a mechanism for urban protection (Figure 1). Morris, Beedell & Hess (2016) attempt to justify the use of rural spaces for urban protection by citing the example of the 2007 UK floods, where less than 5% of the £3.2 billion damage costs were attributed to agricultural land. This justification based on agricultural assets ignores the impacts inflicted upon the non-agrarian rural population.

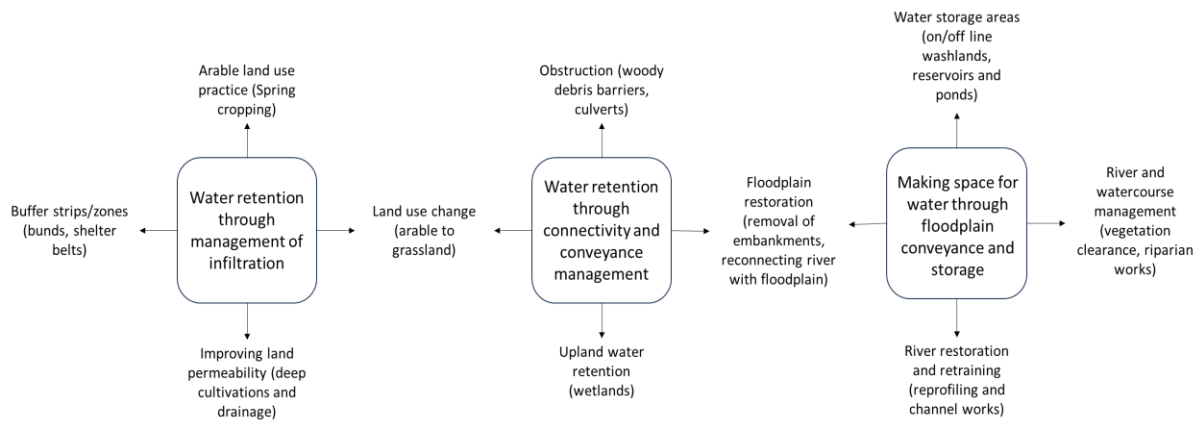


Figure 1: Rural land use and intervention methods contributing to FRM. Adapted from Morris, Beedell & Hess (2016).

The use of agricultural land to alleviate flood risk elsewhere is contested among the farm/landowner community (Wells *et al.*, 2020). There is ongoing debate regarding the reward and compensation of landowners and farmers as a mechanism for justice (Morris, Beedell & Hess, 2016; Posthumus *et al.*, 2008). Further, although many of the interventions outlined in Figure 1 are farm/landowner specific, other measures such as floodplain restoration have the potential to impact wider rural society, those residing in villages and hamlets who do not work in agriculture. This raises further questions surrounding the ‘just’ consideration of rural communities in FRM where there is a tendency to view rural communities as simply agrarian.

Within contemporary flood policy, rural areas are expected to fulfil a ‘protector’ role, yet the implications of this role on wider rural society are largely overlooked, not least owing to the limited social science consideration of rural flood-exposed communities in the UK. At a time of increasing acknowledgment of social (in)justice in FRM and calls that flood impacts should be managed equitably (Sayers, Penning-Rowsell & Horrit, 2018), greater consideration of rural community perspectives in FRM is required (Bang & Burton, 2021). Achieving just consideration of rural communities in FRM requires an understanding of the perspectives of rural community members and FRM organisations.

4. Methodology

4.1. Research Design

This study is part of a broader investigation considering ‘lived’ flood experiences of rural riparian communities in the River Severn catchment. Utilising a phased mixed-method approach, data collection commenced with a targeted questionnaire survey aimed at rural community members. Insights gathered from the survey informed subsequent interviews conducted with representatives of flood risk management (FRM) organisations who were active in the region.

4.1.1. Study Participants:

4.1.1.1. Rural Community Participants

Rural community participants comprised residents and business owners situated in rural flood-exposed areas in the River Severn catchment. These areas were defined as those outside of settlements with over 10,000 residents (DEFRA, 2017). Utilising targeted sampling (via social media), a questionnaire survey was distributed throughout the catchment, yielding 176 responses. The survey explored rural community perspectives on FRM, their current involvement in FRM activities and their desire for increased involvement. Rural community insights informed the subsequent interviews with FRM organisations.

4.1.1.2. Flood Risk Management Organisations

Semi-structured interviews were utilised to gather the insights of FRM organisations. This data collection approach provided flexibility as interview schedules could be shaped based on rural community findings. The initial organisation identified as relevant to this investigation was the Environment Agency (EA) owing to its statutory duty of developing National Flood & Coastal Erosion Risk Management (FCERM) strategy in England (Environment Agency, 2020). Further selection of organisations was through chain-referral sampling (i.e., if an organisation was acknowledged to play a role in another organisation's FRM actions, they would become an organisation relevant to this study). Table 2 summarises participating organisations:

Table 2: Participating organisations and their role in FRM (Local Government Association, n.d.: The National Flood Forum, n.d.).

| FRM Organisation | Scope | Role/Responsibility |
|--|-------------------------------------|--|
| Environment Agency (EA) | National (England) | The Environment Agency oversees all types of flooding and coastal erosion as per the Flood and Water Management Act (2010). |
| Shropshire Council Lead Local Flood Authority (LLFA) | Local | LLFAs take the lead in managing various local flood risks, including surface water, ground water, and ordinary watercourses. |
| National Flood Forum (NFF) | Non-governmental organisation (NGO) | The National Flood Forum is a charity providing support and advice to individuals and communities impacted by flooding. Key roles include: <ul style="list-style-type: none"> • Providing support and advice. • Advocating for the interests of flood-affected communities. • Encouraging community engagement and collaboration on flood issues. • Sharing knowledge and resources to increase public awareness of flooding and FRM. • Influencing flood-related policies and practices. |

Four mid-senior officials were interviewed from these organisations (two via telephone, two via Microsoft Teams video call): two Environment Agency representatives, one Shropshire County Council Flood Risk Manager (LLFA), and one National Flood Forum representative.

Participants were encouraged to focus their responses on rural areas, aiming to capture insights that specifically relate to rural contexts. The broad themes covered in interviews were: an overview of role(s) in FRM, role and opinions relating to FRM in a rural context, rural community engagement, and challenges to rural community engagement (institutional and community based).

4.1.2. Ethical Considerations

All participants were assured of confidentiality and anonymity prior to their participation in the research. Before starting questionnaires and interviews, participants were fully informed as to the nature of the study and the purpose of their involvement.

4.1.3. Data Analysis

Analysis of questionnaire data was performed using the Statistical Package for the Social Sciences (SPSS). Interview recordings were transcribed and anonymised. Subsequently, interview data was coded and analysed thematically using the qualitative analytical software package NVivo. The key themes of rural community considerations in FRM, rural community

involvement in FRM, challenges to involvement, and pathways to involvement were explored to uncover patterns and insights relevant to the research (Clarke & Braun, 2017).

5. Results:

5.1. Rural Community Perspectives

5.1.1. Sample Overview

As is typical of rural areas in the UK, the sample population is older and lacks ethnic diversity, although the sample profile closely matches Office for National Statistics (2021) census data for the study area (Figure 2). The distribution of household income is broadly representative of the UK (Figure 2C). All respondents were full-time rural residents, with 28 (16%) also identifying as business owners. Forty-eight percent (84) resided in ‘villages in a sparse setting’ and 52% (92) resided in ‘town and fringe’ locations. Forty percent (70) of the sample reported experiencing property flooding (residential and/or business) and 94% (165) have experienced indirect impacts due to flooding (i.e., disruption to daily life).

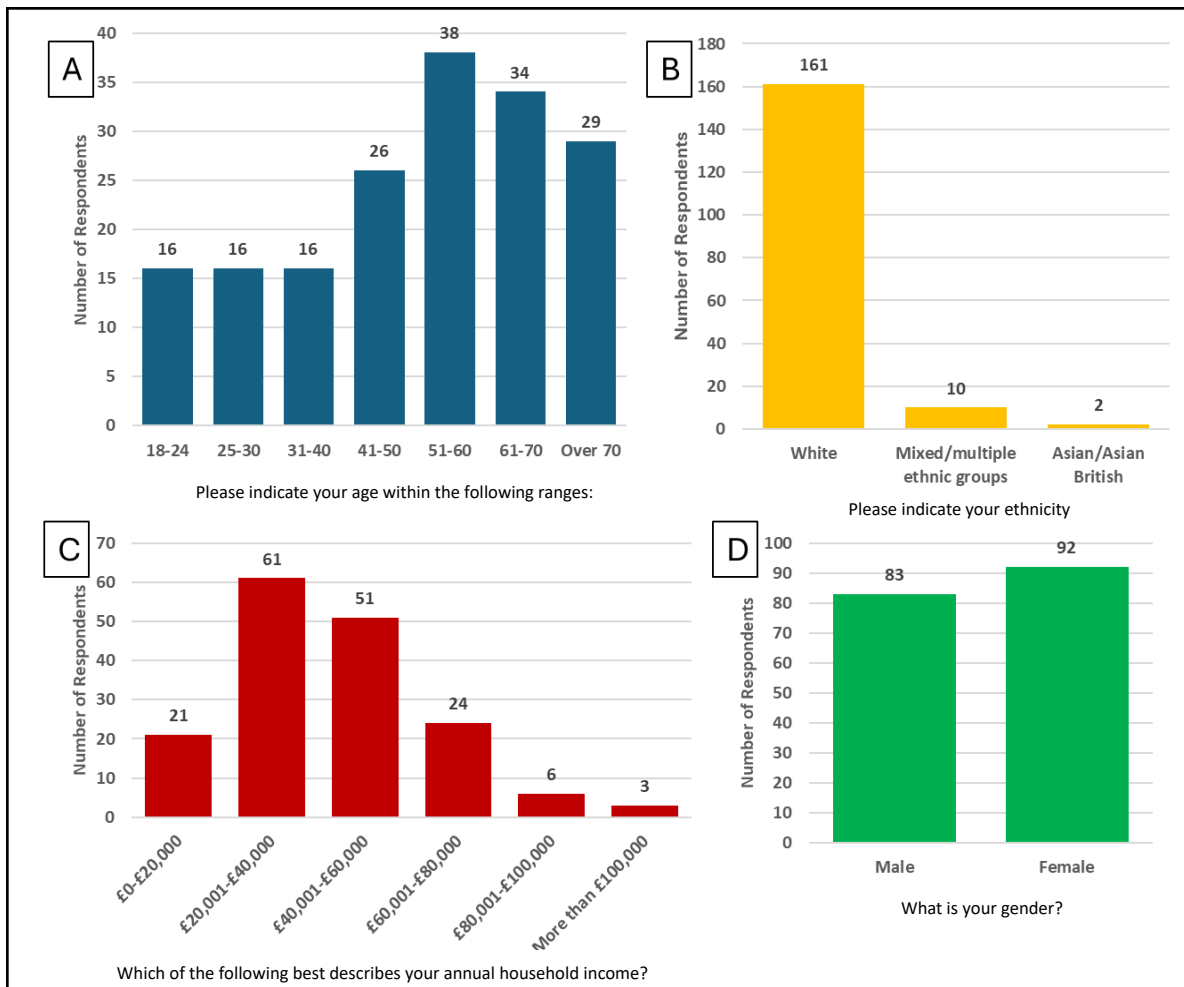


Figure 2: A demographic profile of the rural community sample. (A) Age, (B) ethnicity, (C) annual household income, and (D) gender.

5.1.2. Rural Community Consideration in Flood Risk Management

Given the increasing significance of rural areas in FRM (Morris, Beedell & Hess, 2016), community members were first questioned about their perceptions of how they were considered and protected by FRM agencies (Figure 3).

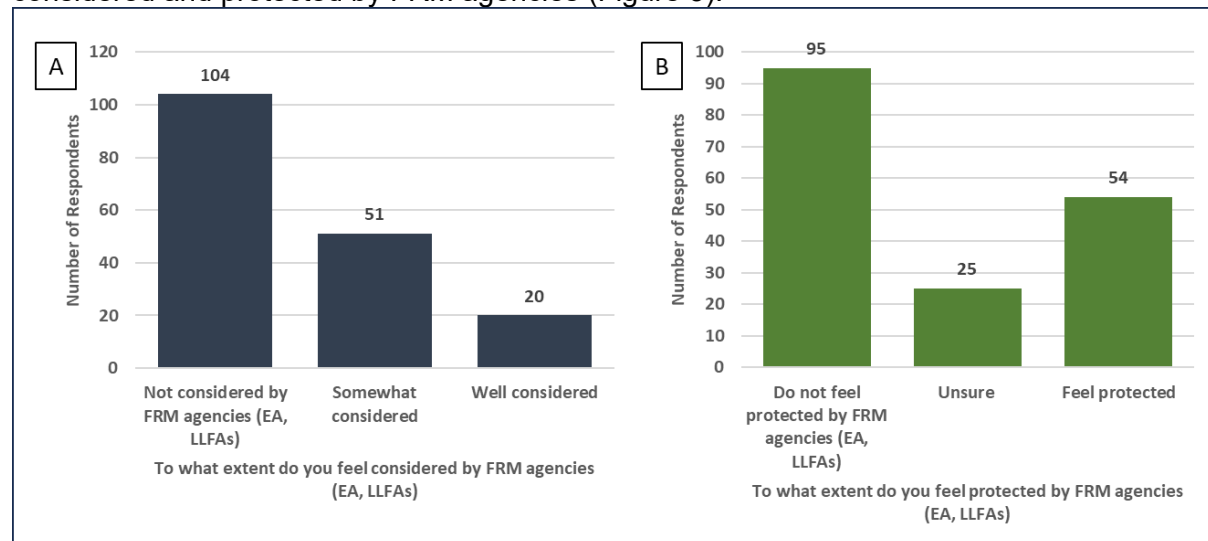


Figure 3: (A) Perceived community consideration by FRM agencies (EA, LLFAs). (B) Perceived community flood protection by FRM agencies (EA, LLFAs).

A majority of the sample do not perceive themselves to be sufficiently considered or protected (Figure 3). Only 11% (20) of the sample felt well considered (Figure 3A), while 31% (54) felt protected (Figure 3B). This perspective reinforces the notion that utilitarianist FRM neglects rural communities (Sayers, Penning-Rowse & Horrit, 2018). However, it is notable that 83% (45) of those who felt protected lived in 'town & fringe' areas compared to only 17% (9) in 'villages in a sparse setting'.

To explore participant considerations in greater depth, they were presented with an open-ended question that sought more detail on how they perceive rural areas to be regarded by FRM agencies. The participant responses revealed distinct themes (Figure 4).

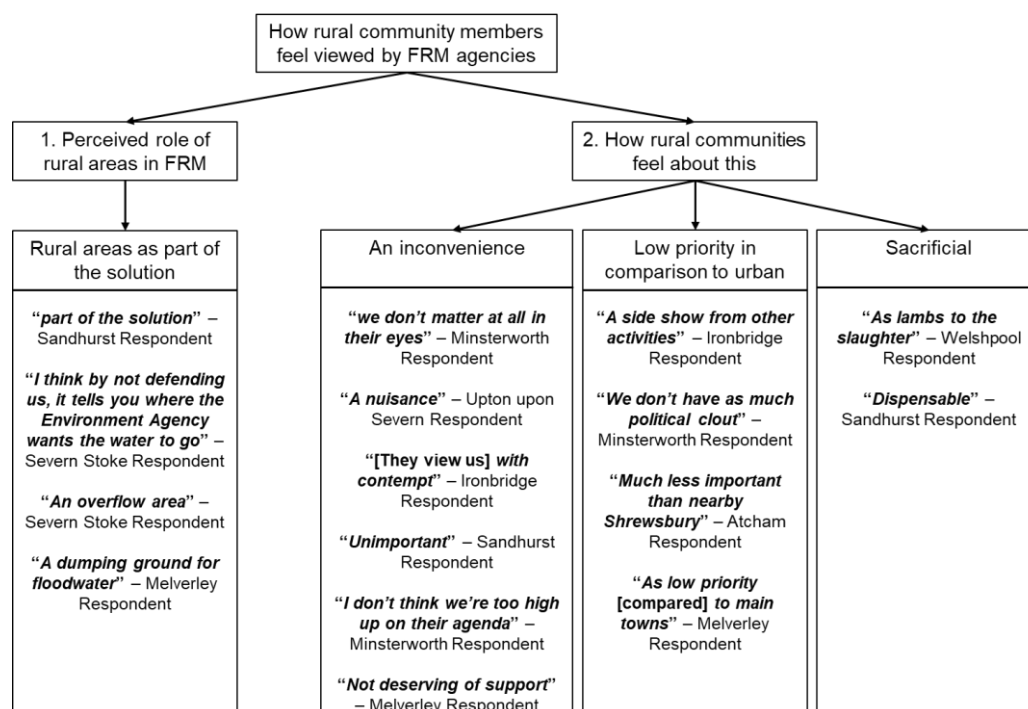


Figure 4: Free text responses to a question on how rural community members feel viewed by FRM agencies.

The participants consistently expressed the belief that FRM agencies regarded rural areas as 'part of the solution' to flooding (Figure 4). This contributed to a sense of 'sacrifice' and 'dispensability'. This sentiment was linked to another prominent theme, where respondents felt they were of lower priority compared to urban areas and populations. This hierarchical perspective among rural community respondents points to a perceived dualism of 'them' (urban) versus 'us' (rural). A recurring theme was that FRM agencies considered them an inconvenience rather than deserving of support. This perception aligned with the perceived focus on urban areas in FRM efforts. The themes and quotes presented in Figure 4 emphasise the strength of opinion rural community members hold regarding FRM, emphasising the extent to which participants feel unjustly considered.

5.1.3. Rural Community Involvement in FRM

While the results above show that participants in this study generally consider themselves to be overlooked by FRM agencies, there are calls for the greater involvement of rural communities in the FRM process (Sayers, Penning-Rowse & Horrit, 2018). Figure 5 summarises the current and potential involvement of the study participants.

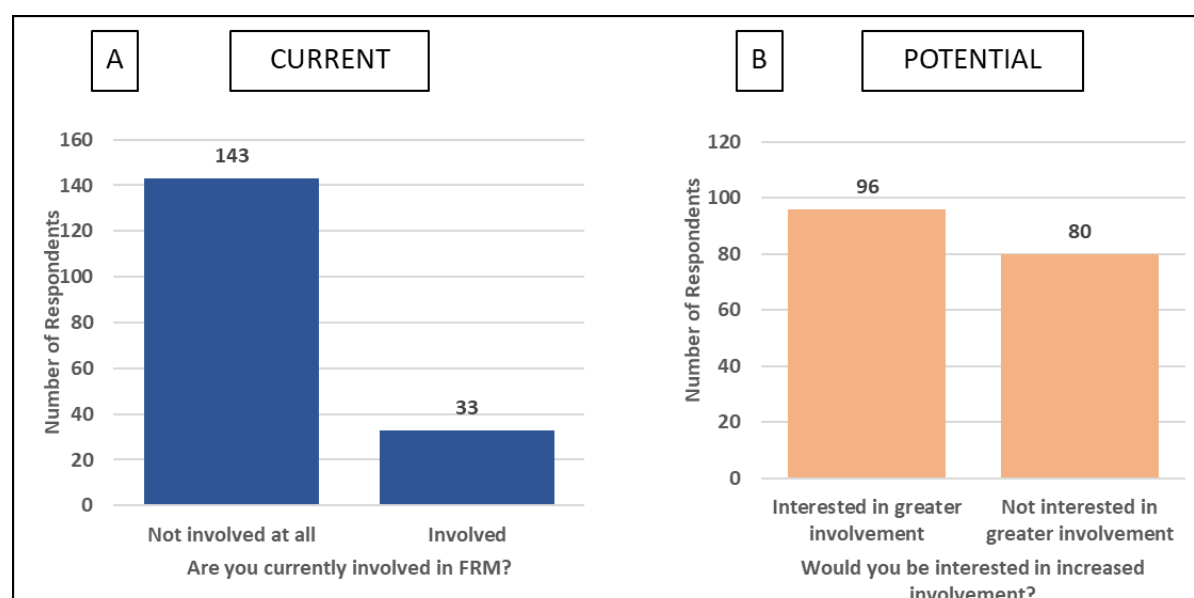


Figure 5: Participant involvement in FRM. (A) Current, (B) Potential.

Currently, 19% (33) of the sample are engaged in FRM (Figure 5A), primarily through public consultations with agencies. However, a majority (55%, [96]) expressed a desire for greater involvement (Figure 5B). Table 3 displays the desired outcomes of increased involvement.

Table 3: Desired outcomes of increased involvement in FRM

| Desired Outcome | Number of Respondents |
|---|-----------------------|
| Opportunity to voice local flood concerns | 67 |
| Share local knowledge of flood risk in the area with residents and FRM agencies | 53 |
| Ensure up to date understandings of local flooding | 51 |
| Opportunities for engagement with FRM agencies | 44 |
| To have more influence over local FRM issues | 37 |

Study participants prioritised opportunities to voice concerns and enhance local flood risk knowledge, aiming to share insights with fellow residents and FRM agencies. They also sought

to improve their own understanding of flood risk and increase engagement with FRM agencies. These desires indicate potential for a collaborative relationship between rural community members and agencies. A notable portion expressed a desire for greater influence in local FRM decision-making.

Despite most participants indicating a desire for increased involvement in FRM, barriers were acknowledged. Table 4 displays the most prominent barriers raised by participants who indicated a desire for increased involvement (Table 4).

Table 4: Sample identified barriers to FRM engagement and involvement.

| Barrier | Number of Respondents |
|----------------------------------|-----------------------|
| No opportunities for involvement | 32 |
| Limited FRM knowledge | 29 |
| Limited personal free time | 27 |

Limited opportunity is the main barrier raised by participants, followed by limited FRM knowledge. To overcome this, those wanting increased involvement proposed the implementation of a digital platform to facilitate rural community interaction with FRM agencies (66%, [63]), and access to flood risk education programs (47%, [45]). Additionally, limited personal free time was acknowledged as a significant barrier to FRM involvement among participants.

5.2. FRM Organisation Perspectives

5.2.1. Rural Community Consideration in Flood Risk Management

The findings above show that most rural community respondents felt overlooked by FRM agencies and inadequately protected from flooding. However, the EA representatives made it clear that rural community protection was a significant part of their remit.

“Absolutely [the agency looks to protect rural areas] properties within rural areas but then also potentially land as well through things like Natural Flood Management projects, so if we’re talking about engineered solutions to protect properties that’s one thing but there’s also natural flood management options as well and they can work together.”

(EA representative 1)

The EA representative highlighted the organisation's responsibility of protecting rural properties and land through a combination of local flood defences and catchment scale natural flood management measures. The other EA representative emphasised the difficulties in providing flood protection for rural communities.

“The EA as I’m sure you’re aware has established, both in terms of reputation and in terms of legality a role in managing flood risk in urban areas broadly to maximise protection of properties and people and of human life in those areas and it’s a fairly well-established role. In rural areas it’s slightly more difficult because the processes that we use I think for evaluating costs and benefits and risks just don’t apply in kind of the same way, the system is more suited for urban areas.”

(EA representative 2)

EA representative 2 emphasises the well-established role of the EA in urban areas, contrasting it with the difficulties in applying this role in rural areas. This disparity stems from challenges in assessing cost and benefit, indicating that the current system is better suited to urban settings. To an extent, this suggests that rural considerations do not fit within the FRM “system”. The EA representatives' comments suggest that the utilitarianist approach guiding FRM provision may not sufficiently incorporate the needs of rural settings.

The survey of rural communities demonstrated the belief that FRM agencies view rural areas as part of the solution, in terms of protecting urban areas. This sentiment was acknowledged by agency-based respondents: *"Its potentially where you need to put nature-based solutions like natural flood management, they need to go in the rural areas to protect downstream urban areas"* (EA representative 1). This point was emphasised by the LLFA representative who stated that rural areas play a *"huge role"* in FRM. However, for the survey respondents the role of protector comes with negative connotations of sacrifice and perceptions of rural areas being an inconvenience to FRM agencies (Figure 4). The FRM representatives were asked if rural communities were rewarded or compensated for their 'protector' role. EA representative 2 provided examples of compensation offered by the EA for rural FRM contributions: *"If they are working in the agricultural sector there are a range of countryside stewardship options that may pay them for those different measures, there are lots of different types of options out there that would give them financial support to do that work so Public Money for Public Goods."*

The use of Public Money for Public Goods (PMPG) is contentious and mechanisms to apply the concept in practice are a topic of current debate (Kam, Smith & Potter, 2023). The discussion of PMPG in the context of land ownership and management makes it a limited form of compensation for rural communities. This was acknowledged by EA representative 1: *"Well that's the crux of the situation at the moment, it's unclear and that makes it [compensation] difficult right now."* The challenges of compensating rural areas can be summed up by EA representative 2 who stated: *"So in terms of what's in it for them, I suppose there is an altruistic element to it"*.

It is acknowledged that utilitarianism in FRM has contributed to a hierarchy with urban areas at the top. The comments of rural community members (Figure 4) suggest that this hierarchy has contributed to divisions between rural and urban flood-exposed populations. In an assessment of the impacts of the 2013/4 UK floods, Thorne (2014) warned that FRM was becoming a socially and spatially divisive topic. This divide was illustrated by the NFF representative:

"... it's almost like an abuse you know oh they're quiet, they don't say anything, I've heard they flooded four times in three years but you know, but look here we've got someone in Stratford Upon Avon who happens to be a solicitor, he's making an awful lot of noise, he hasn't had water in his house but he can't drive his car to work so we better focus on that, it's terrible."

(NFF representative)

5.2.2. Rural Community Involvement in Flood Risk Management

Most rural community respondents did not feel engaged in the FRM process. Increased rural community engagement is seen as a way of enhancing justice in FRM (Sayers, Penning-Rowell & Horrit, 2018). The disparity between current and potential rural community involvement indicates challenges in facilitating this. Representatives from FRM agencies were asked to give their perspectives on the challenges of involving rural communities.

5.2.2.1. Challenges to Rural Community Involvement in FRM – FRM Organisation Perspectives

The LLFA representative identified a shortage of resources as the primary obstacle to facilitating rural community participation in FRM: *"Resource is always going to be an issue, there is so much more that I would like to do [for rural communities] but just simply don't have the resource in the team to do it"* (LLFA representative).

The EA representatives did not mention resource as a factor impeding their ability to engage with rural communities, instead citing “bureaucracy” as the main prohibiting factor: *“the bureaucracy, the process that’s in place.”* (EA representative 1). EA representative 2 expanded on this: *“It’s [rural community engagement] slightly difficult because the EA’s role in an institutional way and in law around more conventional sort of flood engineering is sort of well-known and quite established and understood”*. In contrast to this, they suggest that rural community engagement is *“less enshrined and so that means the ways in which we can engage with people can be slightly limited because our role isn’t the same [in the rural context]”*. The comments of EA representatives suggest that a lack of clarity exists regarding how rural community engagement fits within the FRM process. The LLFA representative expressed frustration at this: *“All we can do is follow procedure and we’re stuck within the rules that we are within”*. These constraints compound efforts to increase rural community engagement as it is not readily incorporated into current FRM procedures.

The NFF representative described how the NFF’s approach to rural community engagement contrasted to that of FRM agencies, emphasising their insistence that the EA follow NFF procedure when collaborating on engagement:

“...we do it [rural community engagement] in partnership with the EA ... but they have to stick to our process, we say they’re not allowed to come on with a clipboard and a load of questions, they’re not allowed to use that top-down approach.”

(NFF representative)

The NFF representative identified the perceived top-down nature of FRM agency engagement attempts as a barrier to effective rural community involvement, noting that rural communities *“despise authority”*. The perspectives of the NFF representative suggests that the perceived authoritative approach of FRM agencies to community engagement lacks efficacy in rural contexts. EA representative 1 acknowledged experiencing difficulties when trying to engage with rural communities: *“...you can go into a catchment where there is a vociferous local farmer who is against it [engagement] and then it seems to quite often be a trend within the catchment.”* They added, *“there are some communities and farmers who do not want to work with us.”* The remarks from both EA and NFF representatives imply that relations between rural communities and FRM agencies are strained due to the perceived authoritative engagement methods employed by agencies. A recurring theme among FRM agency respondents was a feeling that some rural community members wished to assert their local authority when FRM agency representatives made engagement attempts:

“You often find that there are people there [rural areas] who are quite abrasive, and they’ve got a lot of local knowledge and a lot of local sway, and they want things done their way.... they’re really useful but you’ve got to learn how to manage them because they influence the rest of the community.”

(LLFA representative)

5.3. The National Flood Forum – A facilitator for rural community engagement?

The findings above demonstrate the way in which representatives of FRM organisations perceive institutional factors to be a barrier to effective rural community involvement in FRM. The FRM agency representatives consistently emphasised the significant role the NFF plays in overcoming engagement barriers with rural communities.

To understand this role, FRM agency representatives were asked about their collaboration with the NFF in rural settings. EA representative 1 provided insights: *“we work alongside the National Flood Forum and we go out to lots of local flood action groups and provide advice where we can.”* These comments indicate that the NFF bring together rural communities and FRM agencies, enabling more effective communication between the EA and rural populations.

While EA representatives stressed that institutional factors limit their ability to engage with rural communities, their collaboration with the NFF mitigates these difficulties. The LLFA representative added:

"So, in Shropshire, we've just entered a three-year contract with the National Flood Forum, they've been working in Shropshire for probably about the last 10 years [...] they've been amazing at coming in and filling that gap for us, doing a lot of work in the background with these communities [...] their approach to community engagement around the flood is really excellent."

(LLFA representative)

The perspectives of the EA and LLFA representatives demonstrate the potential of the NFF to support FRM agencies in rural community engagement. The NFF representative attributed the effectiveness of NFF-rural community engagement to a strong mutual relationship: *"... we're so aligned to how people are feeling and what they're thinking, and we know all the issues back to front and inside out and we're quite confident to go [and engage]."*

Despite the important role the NFF plays in facilitating rural community involvement in FRM, the NFF representative outlined several factors limiting the organisation's ability to do this. These primarily relate to the organisation's charity status: *"We can only work there if we can afford to, so being a charity, we have no core funding."* A consequence of this is that not all communities have access to NFF support: *"we are a charity and can't fund our service for all communities at the minute, so some rural flood groups miss out on our support".*

However, the NFF representative was cautious about accepting financial support from organisations responsible for FRM, acknowledging that their lack of core funding provided *"neutrality"*. The NFF representative suggested that they would not be as trusted by the communities they wish to support if they accepted DEFRA funding.

"... it's very hard surviving hand to mouth and some staff say if DEFRA offers us money, we should take it and I've actually always fought that because we'll mean nothing to the people if they know we're funded by DEFRA."

(NFF representative)

The NFF representative provided a scenario where core funding would be acceptable: *"It would be better if funding was available through the emergency services or something like that because they're generally more trusted."* Core funding for the NFF could facilitate the 'just' inclusion of rural communities in FRM. The current absence of such funding is considered the dominant factor limiting the NFF's ability to access a wider proportion of the rural flood-exposed population. At present, there are no means of providing funding in this way. Despite these ongoing challenges, the agreement between the FRM agencies and NFF representatives suggests that the NFF is uniquely positioned to support the just involvement of rural communities in FRM.

6. Discussion

As introduced in Table 1, the modern flood risk management paradigm calls for FRM to be an equitable undertaking (Johnson, Penning-Rowse & Parker (2007)). Rural areas and communities have been overlooked in discussions of FRM and social justice. However, with calls for the increased engagement of rural communities in FRM (Sayers, Penning-Rowse & Horrit, 2018), this research found that within the study catchment only a minority of rural community respondents feel considered by FRM agencies and able to engage with the FRM process. However, a majority of respondents indicated a willingness to become more involved, citing opportunities to voice local flood concerns and work with FRM agencies as motivating factors. While most rural community members express a desire for increased FRM

involvement, and FRM agency representatives showing willingness to better involve rural communities, the existing limited engagement indicates the presence of a number of barriers. These barriers primarily relate to the longstanding utilitarian architecture of FRM agencies (Sayers, Penning-Rowse & Horrit, 2018; Thaler & Hartmann, 2016).

The perspectives of EA & LLFA representatives suggest that rural areas and communities do not naturally fit in the FRM process. In contrast to this, FRM agency representatives emphasised their well-established role in urban areas. This highlights the way in which utilitarian perspectives, which currently dominate FRM, prioritise urban areas whilst limiting the consideration of rural communities (Kaufmann, Priest & Leroy, 2018; Sayers, Penning-Rowse & Horrit, 2018; Thaler & Hartmann, 2016). Although initiatives like FDGiA aim to mitigate the disproportionate impact of utilitarianism on vulnerable groups (Sayers, Penning-Rowse & Horrit, 2018), insights from the EA, LLFA, and NFF representatives demonstrate that FDGiA have not effectively ensured just treatment for rural, flood vulnerable communities.

In his review of the 2013/4 UK floods, Thorne (2014) warned of the potential of the utilitarian approach to exacerbate social and spatial divisions. The perspectives of rural community respondents revealed a clear dualism of us vs them, with many feeling marginalised in favour of urban areas and perceiving themselves as low priority for FRM agencies. Figure 1 shows the vast potential of FRM interventions premised on the rural landscape. This was reaffirmed by FRM agency representatives who acknowledged the significant role rural areas play in urban protection through activities such as NFM and sacrificial flooding. If rural areas are to play this role it is widely believed they should be compensated or rewarded (Morris, Beedell & Hess, 2016). While FRM agency representatives mentioned that PMPG measures could benefit those involved in land management or ownership, the underdeveloped and contentious nature of PMPG provides little assurance to those landowners impacted by FRM measures (Kam, Smith & Potter, 2023). Additionally, discussing PMPG primarily in the context of land ownership and management limits its effectiveness as a means of compensation for all rural community members disadvantaged by FRM measures. Beyond land ownership and management, the only acknowledged reward for rural community members adversely impacted by FRM measures was altruism. However, rural community perspectives emphasised the negative connotations associated with this role rather than expressing feelings of altruism.

Both LLFA and EA representatives expressed a desire to increase support for rural communities. However, they identified resource constraints (LLFA) and bureaucracy (EA & LLFA) as significant hindrances. Limited resources were seen as a factor limiting the LLFAs' capacity to assist rural communities, while bureaucracy impeded effective communication and engagement between FRM agencies and rural residents. Although resource constraints and bureaucracy are not exclusive to rural areas, it is important to recognise the relative prioritisation of urban situations under utilitarianism (Sayers, Penning-Rowse & Horrit, 2018). Although urban areas also contend with resource constraints, utilitarianist funding mechanisms streamline resource allocation to urban areas, as noted by EA representative 2.

While the modern FRM paradigm calls for the equitable management of floods (see Table 1), rural community participants did not express desires for equality with urban populations. Increased protection was not a desired outcome. Instead, they emphasised their desire for the rural voice to be heard through collaboration with FRM agencies, which is largely facilitated by the NFF. Thus, the just involvement of rural communities in FRM seemingly hinges upon more certain funding arrangements for the NFF. FRM agency respondents emphasised how the NFF helps them to overcome rural community engagement barriers. However, the organisation's charity status limits their effectiveness, with the NFF representative acknowledging that they could not offer their service to all flood exposed rural communities. This raises questions about a disproportionate reliance on charity to support rural communities, highlighting disparities in support and provision between urban and rural areas.

In essence, urban-focused FRM is largely state-financed, while rural engagement with FRM relies on charity support to a much greater degree than urban areas. The uncertain resource arrangements associated with charity funding have the potential to jeopardise support to rural communities, placing them at further disadvantage.

7. Conclusion

This research set out to consider the social justice of FRM in rural areas of the River Severn catchment, gathering insights from rural community members and FRM organisations. A minority of rural community respondents feel protected by and engaged with FRM agencies, however, a majority do not feel protected, and expressed a desire for increased involvement and deeper collaboration with FRM agencies via opportunities to voice local flood concerns and knowledge. FRM agency representatives also showed willingness to engage rural communities, but face challenges due to the prevailing utilitarian philosophy guiding FRM in England and Wales. FRM agency representatives emphasised the important role of rural areas in FRM especially in relation to NFM. However, questions were raised regarding the contentious nature of PMPG which complicates the compensation of rural communities adversely affected by FRM measures.

Despite difficulties in ensuring just consideration of rural areas in FRM, the role of the NFF in facilitating rural community engagement became apparent. However, the NFF's charity status and lack of core funding limits its reach. Addressing these funding constraints is crucial for ensuring the just involvement of rural communities in FRM going forward. With these findings in mind, the following recommendations are made with a view to facilitating just consideration of rural communities in FRM:

1. Providing core funding to the NFF could increase its reach in rural areas. The source of this funding should be carefully considered to mitigate potential concerns regarding impartiality. Access to funding channelled through the emergency services may alleviate any reputational implications for the NFF.
2. Given the uncertainty surrounding the compensation of rural community members adversely affected by FRM strategies, the input of rural community members should be sought to inform the ongoing targeting of PMPG in the FRM context. This will better enable PMPG to become a more effective mechanism for social justice in rural areas.
3. Mechanisms should be established for rural communities to engage directly with FRM agencies, fostering dialogue to address concerns and share knowledge on local flood risks. Implementation may include online platforms or expanding the reach of NFF supported flood action groups in rural areas. Further research is needed to determine the best approach to ensuring equitable access for all rural community members.

By considering the perspectives of floodplain rural communities and FRM organisation representatives in the River Severn catchment this paper provides insights into the justness of rural consideration in FRM. Rural communities across the nation face similar challenges of marginalisation and underrepresentation in FRM. Therefore, the recommendations provided in this study are applicable beyond the River Severn catchment, extending to other rural areas in the UK affected by fluvial flooding.

While this study focussed on areas directly impacted by fluvial flooding, perceptions on justice may vary amongst rural communities exposed to different types of flooding or in different catchments. There is therefore a need for further research on FRM justice in rural contexts. This research should take an interdisciplinary focus, drawing on contemporary rural geography, which is increasingly turning its attention to issues of social and spatial justice (Woods, 2023). By integrating perspectives from fields such as FRM research and rural geography, a more comprehensive understanding of rural communities' perspectives can be achieved.

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