

Establishing Resilient Community Flood Groups to Reduce Flood Impacts in England and Wales

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ABSTRACT

Flooding is one of the most common natural hazards within England and Wales. Previously, the flooding sector focused on reducing flood risk and exposure through the construction of flood defences; however, a more progressive approach is required to reduce flood impacts through improving flood resilience. Community Flood Groups (CFGs) are one way of improving this, through representing community requirements and improving resilience. These grassroot community groups provide a platform for flood-affected communities with Key Flood Actors (KFAs) and potential policy changes. However, the sustainability of these groups is precarious, with many becoming dormant or disbanded over time. To address this issue, this project aims to develop a CFG sustainability framework that will identify key areas for groups to improve. As part of this wider research project, this paper identifies initial factors that can influence CFG sustainability through an online survey distributed to flood group members, asking questions regarding the group's demographics, practices and relationships with KFAs. 132 responses were collected from 102 groups in England and Wales. Reflective thematic analysis was used to identify recurring themes within responses, which were then used to identify initial CFG sustainability factors. A range of both positive and negative factors were identified, such as age of group members, which can be detrimental to group longevity if younger generations are not involved, which is the case in many groups. Other factors include communication methods, being able to reach residents in time of need and use of social media, perceived active status of the group, and relationships with key flood actors. These are all determined as factors that may affect group sustainability. These preliminary factors will be taken forward to phase 2 of the research, where further methods, including interviews and workshops, will be used to confirm and identify further factors, ultimately resulting in development of a CFG Sustainability Framework.

KEYWORDS: Community Flood Groups, Resilience, Sustainability Model, Factor Identification

1 INTRODUCTION

Flooding is one of the most common natural hazards globally, with data suggesting that floods account for around 35-40% of weather-related disaster occurrences (Web-1), as well as being the costliest in terms of damage (Whitfield, 2012, Web-2). Flooding is expected to increase, driven by climate change and rapid urbanisation rates. With 55% of the world residing in urban areas (Web-3), increasing to 94.9% and 88% in England and Wales respectively (Web-4), the impacts of flooding can be devastating to many.

With an increase in both flood events and flood impacts, we need to ensure that the communities who are the greatest risk of flooding are not forgotten about, particularly those in rural areas. Previously, flood management in England and Wales has centred around reducing flood risk, focusing on an 'engineered' approach (sea walls, flood defences) designed to 'keep water out' (Web-5). More recently, this has shifted towards a more integrated approach, including flood resilience practices (i.e. 'learning to

live with water' or Natural Flood Management), encompassing community-level actions, to help try and reduce the impacts of flooding.

It is important that all communities are represented within flood resilience, ensuring that the previous inequalities, such as flood exposure and funding can be reduced. Therefore, allowing communities to have a voice within flood risk management practices is important and vital. One way to achieve this is through Community Flood Groups (CFGs), including Flood Action Groups and flood wardens. There are over 400 of these grassroot groups in England and Wales; they act as the voice of the local community.. Forrest *et al.*, (2017) described CFGs as 'groups of people who have an interest in flood issues and meet to discuss them' whilst providing advocacy for the local community and aid in times of need. Many groups are formed following a major flood event within their local area, to try and address immediate concerns and reduce potential future impacts. To contribute to long-term flood resilience, they are required to persist over time to maintain their active status; if they become dormant or disband the area is left undefended once again.

Many CFGs are assisted by the National Flood Forum (NFF), who are the main charity that are dedicated to assisting communities prior to, during and after flood events in England and Wales. The help of the NFF can be vital in CFGs forming a strong, beneficial relationship with Key Flood Actors (KFAs) (i.e. the Environment Agency, councils, utility companies, emergency services). This is important as the groups can provide them with vital lay knowledge, that may be missed if they are not consulted, allowing the complexity of local flooding to be captured (McEwen *et al.*, 2012); which is key in enhancing local flood resilience and helping future flood risk management plans in the local area.

Expanding and safeguarding the CFG network is therefore critical and is part of the new Environment Agency Flood and Coastal Erosion Risk Management (FCERM) Strategy Action Plan 2021 (Web-6). A key directive of this strategy is to support vulnerable communities and develop community led flood response plans, elements CFGs can assist in delivering if effective. It is also included in the UK Government Resilience Framework, where it is set out that the Voluntary and Community Sector (VCS) plays a key role in improving the UK's resilience (Web-7). However, the sustainability of these groups (including their functionality and practices) is precarious. Over time, some groups become dormant, ineffective, or disband and dissipate. It is key that CFGs are ultimately sustainable, as a loss of functionality can negatively impact recovery during disasters (Irawan *et al.*, 2021). Ensuring the longevity and sustainability of local CFGs is therefore key to ensure that flood impacts are reduced in vulnerable communities.

The aim of this paper is to identify preliminary key factors that determine the sustainability of CFGs, which can ultimately contribute to the development of a CFG Sustainability model. Such a model could then help improve the longevity and impact of these key groups. This is achieved through the following objectives:

- Conduct CFG questionnaire assessing group members opinions on the group's functionality and practices, inclusive of strengths, weaknesses and relationships with KFAs
- Conduct thematic analysis of survey results, identifying potential baseline CFG sustainability factors to be further analysed.

2 METHODOLOGY

2.1 Survey design and distribution

A survey was designed in three sections, to utilise the views of CFG members, and opinions of their group dynamics and relationships. Section 1 focused on the collection of demographic data (age, gender, location) as well data on the number of members, age of the group, group affiliation and active status of the group. Section 2 focused on the perceived strengths and weaknesses of the CFGs. Section 3 focused on the group's relationships with KFAs, as well asking what makes a CFG effective.

These surveys were designed using a mix of open and closed questions. Whilst closed questions provided structure and comparable data (Patel and Joseph, 2016), open questions allowed a depth of data

to be collected, allowing the respondents to express their opinions freely and thereby reduce researcher bias (Jenn, 2006).

The surveys were distributed online, using a targeted sampling method, via the NFF who acted as a gatekeeper. Surveys were sent out via email, Facebook, LinkedIn and X to over 400 CFGs. These were also shared by the research team as well as the Environment Agency, resulting in 132 answers from 102 different CFGs across England and Wales.

2.2 Thematic analysis

Reflective thematic analysis (TA) was conducted on the open-ended questions, following Braun and Clarke's (2006) 6 stage approach. Themes were identified through extensive analysis of each response, identifying commonalities and coding these to identify key themes. This process ensured that all answers were analysed in a consistent way, whilst still allowing flexibility for themes to be identified from the data, without being decided beforehand. Computer-assisted qualitative data analysis software (CAQDAS) NVivo was used to help organise codes and themes identified during TA.

3 RESULTS AND DISCUSSION

Numerous themes and potential CFG sustainability factors were identified from the survey results, including group dynamics, ensuring increased collaboration and knowledge sharing, and having the knowledge, skills and training to make the groups effective. The main factors drawn from the survey results are discussed in more detail below.

3.1 Age of members

Whilst gender was split relatively even between male and female (55% and 43% respectively), with 2% preferring not to say, age appeared to be increasingly disproportionate, with 95% of responses falling in the age categories of 41+. This was also a factor that had been discussed with preliminary meetings with NFF staff and had been identified as a potential issue prior to the data collection. Similar findings have been identified by Nakamura *et al.*, (2025) when assessing demographic variations in volunteering, with 66% of identified volunteers from the UK being over the age of 40. Exploring this further, the average age of participants in this study was between 61-80, which is predominantly around retirement age within England and Wales. This aging demographic of the CFGs can be a benefit, as these are likely the demographic that have the most free time for volunteering. However, this indicates challenges relating to inclusion, as younger demographics are impeded from participating due to work, caring or other commitments.

This ageing demographic is also a downfall of the groups, due to a higher possibility of health decline (Tang *et al.*, 2010), that can cause older volunteers to step away. This was also identified by participants as one of the weaknesses of the group, with one participant stating: *"I'm 74 and am concerned that if I become unwell, the group will fold. I try to keep records in order. We would like more young people involved."* As we are moving towards an increasingly individualised society, encouraging younger generations to become volunteers can be met with increasing difficulty, even though these are the people that will be most affected by change (Jardim and Marques de Silva, 2018). However, the participation of younger volunteers is important for the long-term sustainability and success of CFGs.

3.2 Group active state and mindsets

For any volunteer group, especially CFGs, to be successful, they need to remain active within the community they serve. However, it is becoming increasingly difficult for this to remain the case, due to several factors. Whilst over 65% of survey participants were part of CFGs that were perceived to be either “Very active” or “Active”, data provided by the NFF suggests that 46% of known CFGs have disbanded. This can prove problematic, especially if the area continues to flood or experiences severe flooding in the future, due a loss in the local knowledge or emergency response and support networks.

Assessing participants’ perceptions of what doesn’t work well in CFGs can help enhance understanding of why some of groups become dormant or disband. One of the most frequently mentioned themes was the internal dynamics and experiences of the groups. This included subthemes such as member engagement and participation, as well as leadership and governance. As the members of the groups are ultimately what keeps them running, ensuring volunteer retention and motivation is vital. This can be difficult due to the demands of the group, who tend to have limited resources and sometimes experience little to no progress (e.g. limited actions taken by KFAs, lack of funding or lack of defined roles within the group), resulting in volunteer turnover. This has been identified in other research, including Holtrop *et al.*, (2024), who also identified factors such as poor communication and poor leadership.

Focusing on the existing dynamics of not only the groups that are dormant or disbanded, but also those groups that consider themselves as active is important as many of the groups also stated group dynamics as something that works *well* within the group. However, these mostly focused on the mindset of the group members and emotions such as “passion”, “persistence” and “enthusiasm”. Ensuring that CFG members keep these high spirits and motivations is important, particularly due to the emotionally challenging situations that members encounter which can lead to despondence or volunteer burnout (Allen and Mueller, 2013). This is therefore considered another important factor that will be taken forward to further analysis, particularly to understand potential methods of maintaining motivation within CFGs (such as training or group maintenance activities).

3.3 Locality and frequency of flood events

The type, frequency, locality and intensity of flooding CFGs experience can also influence a group’s longevity and sustainability. Many of the CFG members experience repeated flooding. Experiencing a “*constantly occurring problem*” was identified by group members as a factor that can make a CFG effective, due to constant exposure improving the desire to continue working on a solution. For example, one participant suggested the group is “*Most effective (unfortunately) when there is a local flooding issue- often difficult to maintain continuity and interest when things are normal/ stable*”. This allows the group members to build knowledge through active remembering, creating ‘sustainable flood memories’ (McEwen *et al.*, 2016), that can be shared within the group for support, or with the KFAs as a tool to help them understand the impacts of previous flood events. This is also a factor that is expected to influence the active state of the group, as if flooding is perceived as no longer a relevant issue this may encourage groups to disband or become dormant. This was most commonly mentioned when the area a CFG was based in had received a “scheme” (i.e. flood defences, sustainable urban drainage systems or property level resilience) and had not experienced any flooding since. However, this can lead to a ‘safe development paradox’, which can result in more severe consequences if a severe flood does occur yet the community are not prepared (Haer *et al.*, 2020). Therefore, a consideration needs to be given to the experience of the groups, and if they have received a scheme.

Even if they ‘no longer’ experience flooding, there is still a depth of knowledge stored within the communities that can be useful in flood risk management practices. This was also identified in the survey, with a sub theme of ‘*local knowledge and experience*’ being identified by many as something that works well within their CFG. This local, lay knowledge can be vital, not only in the recovery stage after a flood,

but also in planning and preparation stages. Therefore, ensuring that this knowledge is used proactively is key in reducing the risk and impacts of future flooding and increasing the resilience of the area. This has been reiterated in the Pitt Review, published in 2008 (Web-8), which in turn led to the Department for Environment, Food and Rural Affairs (DEFRA) to acknowledge the inclusion of lay community knowledge within flood risk management is vital (McEwen *et al.*, 2016). However, it is important to consider how this knowledge is not only gathered, but also used by KFAs, to ensure that it is effectively considered in future planning for the area.

3.4 Communication strategies

Communication was identified as a factor that influences not only what works well within the groups, but also what does not work so well. This is a vital skill for developments within communities (Adedokin, Adeyemo and Olorunsola, 2010), especially those advocating for change, like CFGs. This communication is not one dimensional but works in many ways and with many different demographics of people, including other group members, the wider community, KFAs and agencies. Each of these actors require a different form of communication, therefore a 'one size fits all' method is inadequate (Bourne, 2015). However, this is not as simple as it may seem, especially when communicating with the wider community and KFAs.

When communicating with the wider community, it appears that many of the groups rely on social media (i.e. Facebook and WhatsApp). Whilst social media can help build online communities, which may in turn form social systems (Mauriner and Heudorfer, 2016), this is only possible if residents have an active platform, which many may not. This was an issue identified by the participants, for example one participant identified issues in '*Trying to reach vulnerable residents who are not online, on Facebook*'. Ensuring that the community is adequately informed as quickly as possible during possible flood events is key in assisting increase the resilience of the area (Nicholls, 2012). Therefore, a diversification of communication is required by the groups to ensure that the whole community is informed. <add sentence here on investigating which platforms CFGs are using and the importance of these being diverse – see reviewer comment>

Furthermore, a different approach is required in the communication strategies when it comes to KFAs. Whilst communication with these actors was considered by many of the participants to be key in making a CFG effective, it was also seen as something that could be better. However, many of the responses indicated that the issue may come from the KFAs themselves, and not from the groups. This included communication between the KFAs and a lack of information sharing. Having good relationships with the KFAs is crucial for the groups, and so this is a factor that needs investigating further.

3.5 Relationships with Key Flood Actors

Whilst communication is a key part of successful relationships with KFAs (such as flood action plans, multi-agency meetings and reporting issues), there are numerous other aspects to this, many of which appear to be challenges faced by the CFGs with KFAs.

With over 70 KFAs being identified from the survey, these relationships can be difficult to manage, especially when each KFAs all have different requirements from the group alongside different focuses. This can have an impact on the effectiveness of a community group and their relationships with KFAs (Balser and McCluskey, 2005). Ensuring these relationships are as advantageous as possible to both parties is essential.

One way of managing this is through using an intermediary party, such as the NFF, to assist and represent the CFGs. They can act as a mediator, assisting with the communication and relationships between the CFGs and KFAs, which can be effective in ensuring that goals are met and any challenges faced can be addressed (Dragomir *et al.*, 2020). However, there are some cases where this is not possible (i.e. a group has stepped away from the intermediary or cuts in funding), therefore, it is important to ensure that this

is something that both the CFG and KFAs can be given guidance on, to help ensure a uniform approach. This is a factor that needs taking forward to future stages.

4 CONCLUSION

As flood frequency and impacts increase, the focus of policy, practice and research need to shift towards those communities who are most at risk. Investing in these communities and groups they form can assist in improving the flood resilience of an area, complementing the traditional engineering focus that has previously been adopted within England and Wales. Focusing on CFGs can help not only provide communities with help during a flood even, but also allow them to have a voice, especially with KFAs. Whilst there are currently over 400 groups within England and Wales, many of the group's struggle with their longevity and sustainability. Therefore, research is required into the difficulties of these groups and how we can make them more sustainable.

To do this, this paper aimed to provide group members with the opportunity to voice their opinions of how their groups work, their strengths, weaknesses and finally their relationships with KFAs. This was assessed through surveys with a mix of open and closed questions, to determine preliminary factors that are important for the sustainability of these key groups.

Whilst many preliminary factors were identified from the survey results, this paper discusses some of the key findings and the CFG sustainability factors that will be taken through to the next stage of the research. One of the biggest challenges faced by the groups was the ageing membership and the worries of continuity that come along with this. This is a factor that was also determined from conversations with NFF staff prior to the start of data collection, therefore was predicted to be mentioned by many of the respondents. Furthermore, other factors including local knowledge and frequency of flood events appear to be important in keeping the momentum of the CFG going, whilst also allowing informed decisions and a voice for the group. These are also important when it comes to the communication strategies of the groups, which allow successful relationships to be built with KFAs and the wider local community. Building these relationships with KFAs is also important in ensuring CFG sustainability. However, sometimes this may not be straightforward, and so having an individual third party to act as a mediator can be beneficial in ensuring these relationships.

These results will now be taken forward to the next stage of research, where considerations from interviews with the NFF and KFAs will be integrated to identify any further key CFG sustainability factors. These will then be presented to CFGs through a workshop, that will be ran in 4 areas around England and Wales, to gather their opinions and explore potential weightings of the factors. This will then result in a decision of the final CFG sustainability factors and the creation of a CFG sustainability model that incorporates these corresponding factors, as well as guides of best practice for CFG members and KFAs. This will create a deeper understanding of these vital groups, ensuring their longevity and impact within the flood risk management and resilience sectors.

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REFERENCES

- Adedeji, T. Proverbs, D.G. Xiao, H. and Oladokun, V.O. (2024). Measuring property flood resilience (PFR) in UK homes. *International Journal of Building Pathology and Adaptation*, 42(6), 1328-1349.
- Adedokun, M.O., Adeyemo, C.W., and Olorunsola, E.O., (2010) The impact of communication on community development. *J. Communication*, 1(2) 101-105.
- Allen, J.A., and Mueller, S.L., (2013) The revolving door: A closer look at major factors in volunteers intentions to quit. *Journal of Community Psychology*, 41(2), 139-155
- Balser, D., and McClusky, J., (2005) Managing stakeholder relationships and nonprofit organisation effectiveness *Nonprofit Management and leadership*, 15(3), 295-315
- Bourne, L (2015) “Targeted communication: the key to effective stakeholder engagement” in 29th World Congress International Project Management Association (IPMA) 2015, IPMA WC 2015, 28-30 September – 1 October 2015, Westin Playa Bonita, Panama, 431-438.
- Braun, V. and Clarke, V., (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Dragomir, C.C., Foriș, D., Țîțu, A.M. and Foriș, T., (2020). The role of intermediaries in supporting collaboration for sustainability: A model of commissioning intervention in the multi-stakeholder collaboration for sustainable territorial development. *Sustainability*, 12(17), 6769-6783.
- Fenn, T. Clarke, C. Burgess-Gamble, L. Harding, E. Ogunyoye, F. Hick, F. Dawks, S. Morris, J. and Chatterton, J (2016) The costs and impacts of the winter 2013/14 floods in England and Wales, in E3S web of conferences (Vol. 7, p. 05004). EDP Sciences
- Forrest, S. Trell, E.M. and Woltjer, J. (2019). Civil society contributions to local level flood resilience: Before, during and after the 2015 Boxing Day floods in the Upper Calder Valley. *Transactions of the institute of British geographers*, 44(2), 422-436.
- Haer, T. Husby, T.G. Wouter Botzen, W.J. and Aerts, J.C.J.H., (2020) The safe development paradox: an agent-based model for flood risk under climate change in the European Union. *Global Environment Change*, 60, 102009
- Holtrop, D. Soo, C. Gagne. M. Kragt, D. Dunlop, P. and Luksyte, A., (2024) Exploring volunteer turnover reasons, intentions and behaviour. *Group and Organisation Management*, 0, 1-45
- Irwan, D., Prabowo, H., Kuncoro, E.A., and Thoha, N., (2021) Operational resilience and human capital toward corporate sustainability longevity in Indonesian. *The Journal of Asian Finance, Economics and Business*, 8(3), 1035-1044.
- Jardim, C., and Marques de Silva, S., (2018) Young People Engaging in Volunteering: Questioning a Generational Trend in an Individualized Society. *Societies*, 8(1), 8-20.
- Jenn, N.C., (2006). Designing a questionnaire. *Malaysian family physician: the official journal of the Academy of Family Physicians of Malaysia*, 1(1), 32.
- Laidlaw, S. and Percival, S. (2024) Flood resilience: A review of evolving definitions. *Nat. hazards*, 120(12) 10773-10784
- Mauriner, O. and Heudorfer, A., (2016) Social media in disaster management: How social media impact the work of volunteer groups and aid organisations in disaster preparation and response *International Journal Emergency Management*, 12(2), 196-217.
- McEwen, L. Garde-Hansen, J. Holmes, A. Jones, O. and Krause, F. (2016). Sustainable flood memories, lay knowledges and the development of community resilience to future flood risk. *Transactions of the Institute of British Geographers*, 42(1), 14-28.
- Nakamura, J.S., Gibson, C.B. Woodberry, R.D. Lee, M.T. Kim, Y. Shiba, K. Padgett, N. Johnson, B.R. and VanderWeele, T.J., (2025) Understanding who volunteers globally through an examination of demographic variation in volunteering across 22 countries. *Scientific Reports*. 15(1) 25299-25321
- Nicholls, S., (2012) The resilient community and communication practice. *Australian Journal of Emergency Management*, 27(1), 46-51.
- Patel, H.R. and Joseph, J.M., (2016). Questionnaire designing process: A review. *Journal of Clinical Trials*, 6(2), 2-7.

- Rose, C. Lamond, J. Dhonau, M. Joseph, R. and Proverbs, D. (2016). Improving the uptake of flood resilience at the individual property level. *Flood Risk Management and Response*, 6(3), 153-162.
- Tang, F. Morrow-Howell, N. and Choi, E., (2010) Why do older adult volunteers stop volunteering? *Ageing and Society*, 30, 859-878.
- Whitfield, P.H. (2012) Floods in future climates: a review. *Journal of Flood Risk Management*, 5(4), 336-365.

Web sites:

Web-1: <https://www.undrr.org/gar/gar2025/hazard-exploration/floods>

Web-2: <https://www.jbarisk.com/knowledge-hub/insights/a-picture-of-future-flood-risk-in-europe/>

Web-3: <https://www.un.org/uk/desa/68-world-population-projected-live-urban-areas-2050-says-un>

Web-4:

<https://www.ons.gov.uk/peoplepopulationandcommunity/housing/articles/townsandcitiescharacteristicsofbuiltupareasenglandandwales/census2021>

Web-5: <https://nationalinfrastructurecommission.wales/2025/06/30/toolkit-community-engagement/>

Web-6:

https://assets.publishing.service.gov.uk/media/5f6b6da6e90e076c182d508d/023_15482_Environment_agency_digitalAW_Strategy.pdf

Web-7:

https://assets.publishing.service.gov.uk/media/63cff056e90e071ba7b41d54/UKG_Resilience_Framework_FINAL_v2.pdf

Web-8:

https://webarchive.nationalarchives.gov.uk/ukgwa/20100807034701/http://archive.cabinetoffice.gov.uk/pitt_review/_media/assets/www.cabinetoffice.gov.uk/flooding_review/pitt_review_full%20pdf.pdf