Measuring the Effectiveness of Flood Groups in England

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In Partnership With:

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Building Resilience into Risk Management (BRIM)

Contents

Table and chart contents

Tables

Charts

Research Proposal

Research question:

- To measure the effectiveness of Flood Action Groups in England.

From this we hope to:

- Identify where groups have succeeded and their reasons for success.
- Identify where and why groups have struggled in their attempts to alleviate flood risk in their community.
- Address the future of Flood Action Groups and how their current situation could be improved.

1. Introduction

Flooding is reported to be the most severe natural hazard threatening the UK, with one in six properties (five million) said to be at risk (Thorne, 2014). The scale of this threat is apparent in the cost of the floods of Summer 2007, which affected large parts of the country. They were estimated to have cost the country £3.2 billion, with average annual flood damages costing anywhere between £500 million and £1 billion (Penning-Roswell, 2014).

The UK is at threat from a range of flood types. Groundwater, fluvial, pluvial and coastal flooding are all commonplace in the UK (Thorne, 2014). The type of flood threatening a certain area will be unique to that area and depend on several factors; topography, geology, climate, vegetation and the cover of impermeable ground (Benson, 1963). However, flood types can merge in a phenomenon known as coincident flooding, a staple of the 2013/14 winter floods (Thorne, 2014).

Nye et al (2011) have identified at least three distinct phases in the UK's management of flooding since World War 2. Between the 1940s and 1970s, the focus was on land drainage and food security then, between the 1908s to mid-1990s, this switched to flood defence and primarily, hard engineered solutions (Nye et al, 2011). Since the mid-1990s, the focus has once again been realigned onto flood risk management and with this new direction, a paradigm shift has occurred in relation to the involvement of the public in flood risk management schemes (Geaves and Penning-Roswell, 2015; Simm, 2016).

In the past, the expectation of the public was to not be involved in flood risk management schemes, their planning, implementation or management but, to simply be aware of their local flood risk (Penning-Roswell et al, 1986). These responsibilities were undertaken by regional committees and supervising professionals (Penning-Roswell et al, 1986). Recently, this has shifted, the public are expected to both be aware and to also participate in the development of flood risk management schemes (Geaves and Penning-Roswell, 2015).

This expectation has prompted the formation of Flood Action Groups, where members of the local community, local organisations and relevant authorities, such as the Environment Agency, work together to implement and improve flood risk management schemes in their area (Geaves and Penning-Roswell, 2015). Geaves and Penning-Roswell (2015) write that the emergence of these groups is far more apparent following a large-scale flood event rather than a small event. Small events typically prompt locals to put pressure on local authorities to improve flood management rather than establish a group which has the capacity to do it themselves. (Geaves and Penning-Roswell, 2015).

The rise of flood action groups in the UK has seen increased focus on flood risk management (FRM) on a smaller scale, targeting local problems with integrated solutions. However, in the modern system, there is delegation of flood risk management responsibilities within the relevant authorities, which often complicate and hinder public involvement (Geaves and Penning-Roswell, 2015). Buchecker et al (2013) write that there is a lack of education on the public's part as to the breakdown in responsibilities of flood risk management and which organisations are accountable for what actions, causing a lack of trust. Observations made in other pieces of literature e.g. Bene et al (2012) and Frankenberger et al (2014) indicate community level resilience is reliant on alterations made at low levels (individuals or groups within a community e.g. flood groups) and is benefitted and made easier by changes at higher levels.

In England, there is a ladder of risk management authorities as outlined by The Flood and Water Management Act (2010), with Defra at the top, possessing the overall national responsibility for policy on flood and coastal erosion management. Defra can provide funding to the Environment Agency (EA), local authorities and internal drainage boards for FRM schemes. The EA supervise much of the work undertaken when managing flood risk and work with other organisations in this, rather than Defra. Local lead flood authorities (LLFAs) develop, implement and maintain FRM schemes at regional levels with assistance from district councils and internal drainage boards. All are assisted in communications with each other through regional flood and coastal committees, of which there are 12 of in England.

The complex nature of delegation in the responsibility of flood risk management in this country can reduce the effectiveness of flood groups (Geaves and Penning-Roswell, 2015). However, there have been successes where groups have proposed and implemented many beneficial flood risk management strategies. Actions such as river bed and bank clearing, drain clearing and the installation of leaky dams have been conducted by flood action groups across the country (Twigger-Ross et al, 2015). The aim of these flood groups is to improve their community's flood resilience which, Bruneau (2003) defines as, 'the ability of social units to mitigate hazards, contain the effects of disasters when they occur, and carry out recovery activities in ways which minimise social disruption and mitigate the effects of future earthquakes'. Whilst the definition refers to disasters in general, it can be applied specifically to flooding.

This paper investigates how flood action groups operate and assess the effectiveness they have had in reducing flood risk in their area, a gap in current research. It will also be beneficial to discover the limitations they have faced, so that other flood groups are aware and can work around them. The longer-term aim is to produce a formula for flood groups to succeed and be able to share the success of others. To achieve this, the project will look to contact a range of geographically dispersed flood groups, interviewing them, and analysing the findings.

2. Methodology

This study aims to measure the effectiveness of Flood Groups in England, a topic that hasn't been researched previously. The hope is to identify where groups have struggled and where groups have succeeded in a bid to resolve some of the struggles other groups have had. By identifying their difficulties, it is hoped that policy makers will look at these issues and address where they can. A survey was created to help identify topics of interest, which combined qualitative and quantitative data. A copy of the survey can be found in Appendix 1.

Initially, the aim was to get 10 geographically dispersed Flood Groups on board to be involved in the project. Firstly, research went into identifying Flood Groups across England. Flood Groups were

identified through literature reviews, social media searches, search engines, grey literature and via personal contacts.

From the preliminary research, 120 Flood Groups were identified. Contact details for the groups were then searched for via Flood Group and Parish/Town Council websites, social media and through personal contacts. In total, 49 groups' contact details were found and were then sent two rounds of emails to engage interest in the project. If at first, they didn't respond, a second email was sent. From this, 12 groups agreed to be involved but due to time restrictions and other commitments from members, the final count was ten groups, in line with the participation we were hoping to achieve when designing the study. (MAP)

After the Flood Groups were identified, interviews were then arranged. The aim was to have at least three participants from each group however, this was not always possible. The limited budget and short time frame to complete the study coupled with the season (summer – many people are away) meant participant numbers ranged from one to four per group with 21 participants being involved in total.

Interviews took the format of either via phone or in person. Ideally, all groups involved would have been visited in person but due to budget restrictions this was not possible. Four groups were visited in person: Bodenham Flood Protection Group, Culmington Flood Action Group, Diddlebury Parish Flood Action Group and Pang Valley Flood Forum. In the meetings, surveys were completed as a group with an emphasis on expanding on points and discussing topics, especially qualitative questions. Meetings lasted between 60 and 180 minutes. Phone interviews were conducted on an individual basis, typically lasting between 30 and 60 minutes, although the longest phone interview lasted 120 minutes. Again, there was an emphasis on expanding points to get the most information possible.

Once all participants had completed their surveys either via group interviews or phone interviews, the data was typed up into transcripts and then analysed thematically to identify themes and patterns in the data which would help achieve our aims.

3. Results

As stated in the methodology section, 120 groups were initially found through various search methods. From this, 49 groups' contact details were found, and 12 groups agreed to be a part of the project. This number dropped to ten due to time restrictions and other commitments. In total, 21 flood group members were involved in the project, ranging from one to four members per group.

3.1 Participant demographics

This is the data gathered from participants regarding their personal demographic and that of their flood group.

3.1.1 Participant age

The age data gathered from participants showed the reliance on the older population to run and to be active members of Flood Groups in England:

Age Range	Percentage answered	Number of participants
61+	81%	17
51-60	14%	3

41-50	5%	1

Table 3.1: Age demographics of participants

3.1.2 Area covered

The number of parishes covered by each group varied. Predominately single parish groups made up the study although it ranged up to 40 parishes. Some participants were unsure of their group's coverage, especially in the larger scale groups.

In total, ten participants answered that their group was single parish based, with two participants stating they covered an area of two parishes and one answering their group covered 8 parishes. Three participants, who were from the same group all answered differently: 14, 20+ and 'around 40.' The area this group covers is larger than any other group hence the uncertainty between members.

3.1.3 Group members

Three answers were given in the group members' category; they were: 6 – 10 members, 11 – 15 members and 25+ members. One participant was unsure of how many members their group had.

Due to the skewed results, with some groups having more members participating in the project than others, there is no benefit in analysing this data.

3.1.4 Flood Group age

The amount of years Flood Groups have been active ranged from two years to 11 years.

Years Flood Groups have been active for
2
3
4
5
6
9
10
11

Table 3.2: All answers given to 'how has the flood group been active for' question.

3.2 Measuring effectiveness

The study looked to measure the effectiveness of Flood Groups in England. The design of the survey aimed to make this a quantitative process, identifying the success groups have had and why they have had them. However, as discussed in the limitations section of the report, the most useful data came from qualitative data. These findings are analysed and discussed in the discussion section and forms the main part of this study.

3.2.1 How effective is your Flood Group?

This question asked participants how effective they personally believed their Flood Group had been. Participants were asked to rank their groups' effectiveness from one to five, one being very ineffective and five being very effective. Whilst the results may be biased, it proved a good question to start discussion of groups effectiveness and helped identify areas of success.

Most participants believed their group was very effective, giving a score of five. A third of participants believed their group was effective and two answered with an effective rating of three – moderate. No one answered with a score of two or one.

Effectiveness rating	Percentage answered	Number of participants
5	57.2%	12
4	33.3%	7
3	9.5%	2
2	0%	0
1	0%	0

Table 3.3: Answers given to 'how effective do you feel your group's actions have been?'

3.2.2 Flood Group alleviation measures

Participants were asked about the flood alleviation measures their group had been involved in, either directly or through lobbying the relevant agencies.

Below, is a table showing all the measures Flood Groups have undertaken to alleviate flooding in their areas. The survey provided 12 measures participants could tick if their group had been involved in and a 13th 'other' category, to allow for any measures which may have been missed and give a chance for participants to expand their answers. The table includes all the answers given, including those fitting the 'other' category.

Participants, in total, gave 22 different measures their groups have undertaken. The most popular answer was 'campaigning for defences' which all 21 participants ticked. Generally, this is the remit for Flood Groups, therefore it is not a surprise to see it as the most popular measure. 'Promoting resilience measures' and 'preparedness for future events' both saw 19 ticks. Following this the other popular answers were 'Pressure LLFAs, local council, agencies etc' with 18, 'educating local area on flooding' with 16 and 'channel vegetation clearing' with 15. Out of the first set of measures put on the survey, all measures were undertaken, with at least one group undertaking each.

Flood alleviation measures groups have taken	Number of participants who believe their group has undertaken measures
Leaky dams (slowing the flow)	7
Channel vegetation clearing	15
Increasing bridge capacities	12
Promoting resilience measures	19
Campaigning for defences	21

Increase of equipment in stock	11
Preparedness for future events	19
Development of a warning system	15
Involvement in clearance after a flood event	10
Deployment of barriers	6
Pressure LLFAs, local council, agencies etc	18
Educating local area on flooding	16
Other:	
Trash screens	3
Buddy system	3
Area representatives	3
Piping under road surfaces to remove run off	1
Flood plan	3
Maintaining infrastructure	2
Relief channel	2
Trauma support	2
Advice centre	1
River or flood model/study	3

Table 3.4: Flood alleviation measures undertaken by groups and the number of participants who recognise their groups involvement in such measures.

3.2.3 Reduction in flood risk

Participants were asked whether they believed their Flood Group's actions have reduced flood risk in their area.

Chart 1 shows the answers to this question, with 95% (20) of participants believing their actions had reduced flood risk locally. Only 5% (1) participant answered 'no' stating that their group had assisted halting the increase in flood risk but had done little to actively reduce it. However, they went on to say that the sub groups (single parish groups) that form their forum style group, focus on active flood alleviation measures in their respective areas.

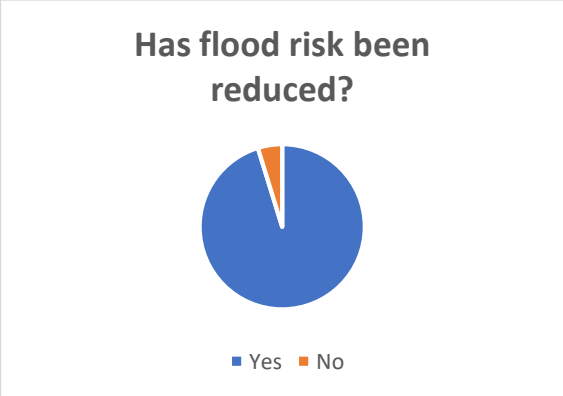

Chart 3.1: Reduction in flood risk data.

3.3 Areas where Flood Groups have struggled

Whilst attempting to measure effectiveness this study hoped to identify areas where groups have struggled in their flood alleviation efforts. Here, the results are presented from the questions that focused on this aim. They are discussed in detail in the discussion section.

3.3.1 Have your efforts as a Flood Group been hindered?

This question looked at identifying the people/organisations that have hindered or held back the Flood Groups' actions. Participants were given a choice of pre-determined stakeholders and then an 'other' category to allow for expansion if the categories didn't capture them all. Participants were encouraged to pick all the relevant groups, if they felt they had hindered their efforts.

17 out of 21 participants (81%) believed their Flood Group's efforts have been hindered by someone. Four participants believed their efforts hadn't been hindered, generally stating they had experienced great co-operation from the local council, residents etc

Out of the people who answered 'yes', Chart 2 shows the groups they felt have hindered them. The Environment Agency was the most common choice with eight participants choosing them. Following this, the local council, whom are often the local lead flood authority, were the second most common choice of those who have hindered Flood Groups. Local residents received 19% of the vote with five participants raising their concerns that local residents were not helping the efforts of their Flood Group.

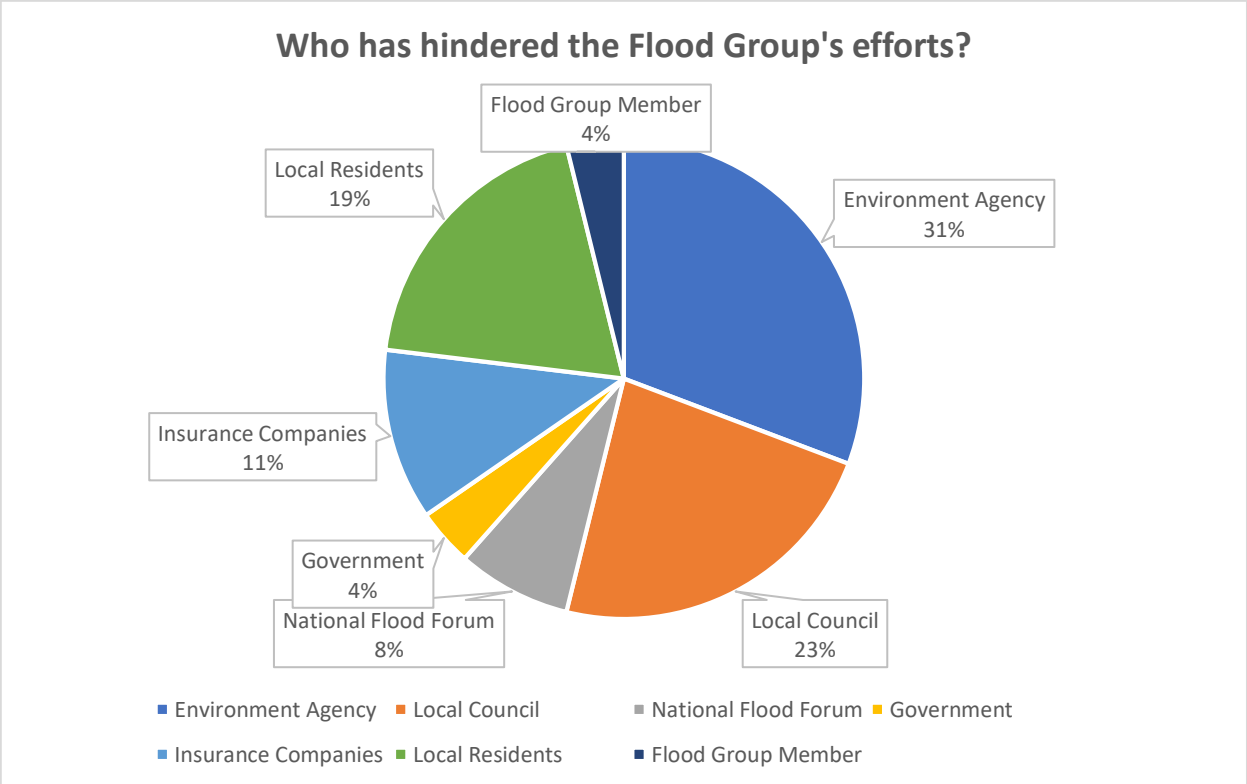

Chart 3.2: Responses to 'Have your efforts been hindered by others? If so, by who?'

3.3.2 Local and Government investment

This was originally one question but was split into two to allow for a greater level of detail from participants. The questions asked if participants believed more investment (monetary, time, human) was needed at local level and at Government level to incentivise effective community action.

In general, participants believed investment was needed at both local and government level to incentivise effective community action. Chart 3 and 4 shows the results; a higher percentage believed more investment was needed at Government level (76%) rather than local level (67%).

Chart 5 and 6 show the points participants raised when explaining their answers. In depth analysis on this can be found in the discussion section.

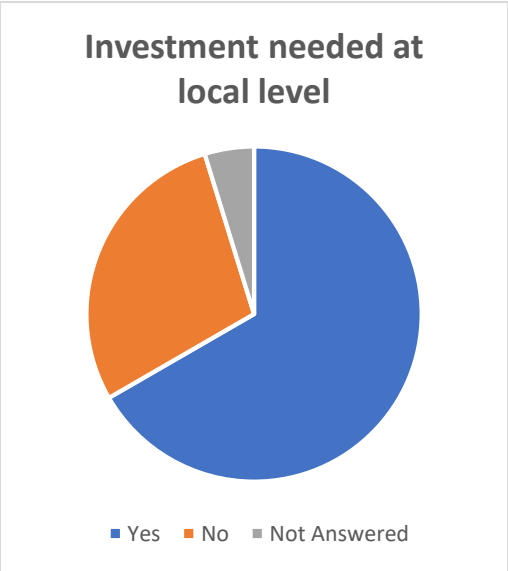

Chart 3.3: Local investment.

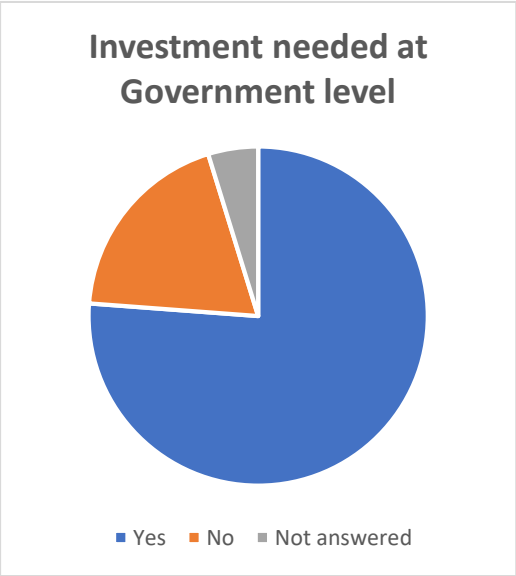

Chart 3.4: Government investment.

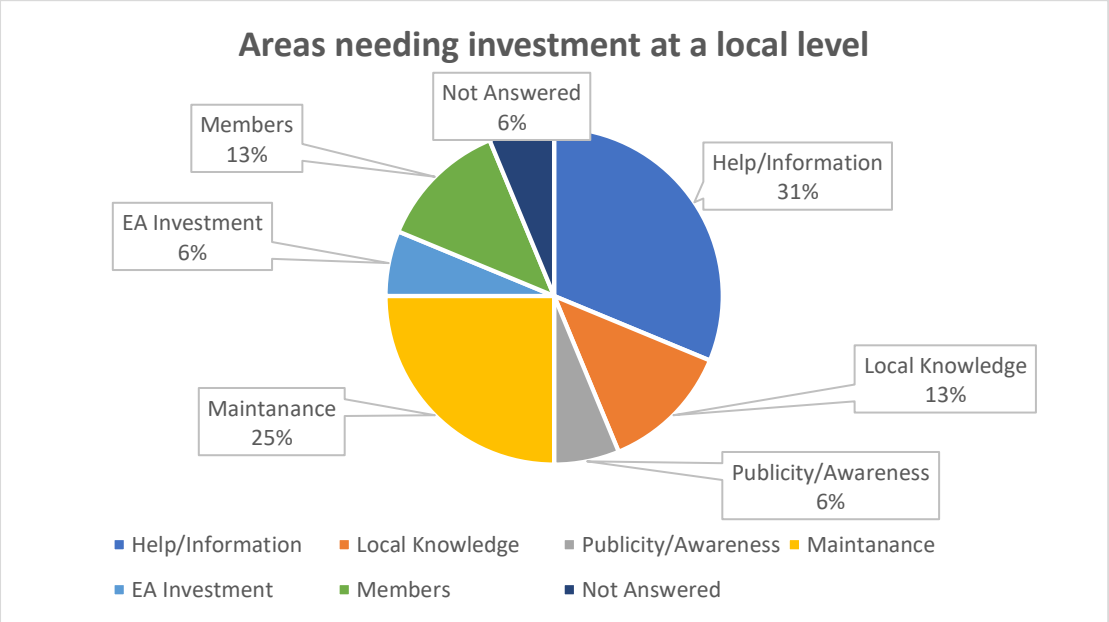

Chart 3.5: Areas highlighted by participants that need investment to incentivise effective community action at a local level.

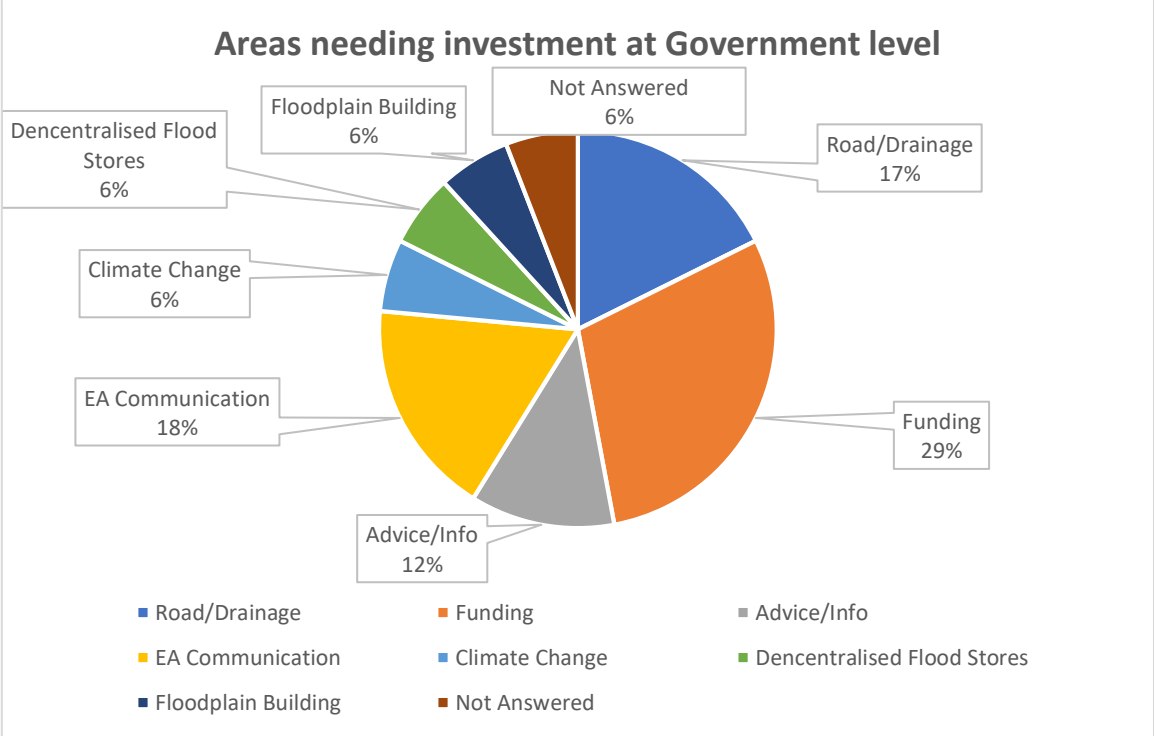

Chart 3.6: Areas highlighted by participants that need investment to incentivise effective community action at a Government level.

4. Discussion

4.1 Where Flood Groups in England have struggled

Outlined below are the concerns Flood Group members expressed and where they felt they had struggled in their flood alleviation efforts. Discussed later is where flood groups feel they have done well and the characteristics they possess which have helped their effectiveness. The aim is to identify the areas a group has struggled and see if other groups have had similarities, and then do the same in the effective characteristics sections with the hope some of the difficulties identified may see potential resolutions in the effective characteristics section.

4.1.1 Housing and Developers

New housing developments, especially those on floodplains, are a concern of Flood Action Groups. Three participants mentioned new housing projects, and the developers proposing them, directly. Meeting housing targets was a concern raised, with one participant saying, 'targets are out of hand'. To meet these targets, developments often utilise the space available on floodplains, which one participant referred to as a 'central government issue'. In their area, as soon as the floodwaters disappeared, developers were building on floodplains. They believe building in river basins should stop which, historically, was necessary be close to a water source. With modern technology however, this is not the case. Participants call for more proactive building on higher ground and avoiding river basins.

One participant explained how the Local Lead Flood Authority for their area would only check for resilience measures in new developments over ten properties in size. The area, West Somerset, is one of the most sparsely populated regions of the country meaning most developments are limited to a handful of properties and therefore, not checked for resilience measures.

Concerns were raised by another participant regarding the impact of developments on infrastructure and the general impact of the increase in impermeable cover. Infrastructure will need upgrading with a rising population. Increased impermeable cover, would also rise with the construction of new developments. Impermeability of areas is one the major causes of surface run off flooding, an issue that is ever increasing in England. This issue (building on floodplains) was also noted by one participant to exacerbate problems in tidal areas.

4.1.2 Funding

The procurement and provision of funding was one of the most mentioned topics, with nine participants raising their concerns about the current state of affairs. The general consensus was more funds are needed to help fund flood groups' alleviation measures but also to make the approval of such projects easier. One participant talked about how the cost benefit analysis for flood alleviation projects often sees their application being rejected. They continued to say that until a flood alleviation project is implemented and tested, its outcomes are often unquantifiable, meaning the cost benefit analysis does not support the application and consequently, the application is rejected. In their view, a better provision of funding would mean a more positive application process and therefore, a higher number of alleviation projects receiving the green light.

Another issue raised with funding was allocation to the correct people for the correct project. Two participants raised the issue that available funding is sparse, and a large amount is squandered. They call for a better delegation of funds to the projects which are most effective, rather than the ones which 'tick all the boxes'. This may refer to the cost benefit analysis mentioned previously, which has the capacity to rule out projects unable to quantify their outcomes, even when they may be the best solution.

One participant spoke of how they knew what their area needed, in terms of flood alleviation, but availability of funds was the issue. In one case, the major cause of flooding in one village was a pair of culverts which, due to their design, became blocked relatively easily by debris in the watercourse. A survey was undertaken which concluded it would cost £250,000 to install new culverts to remove the threat they posed to the village if blocked. However, the local council stated the cost was too high and therefore, the culverts still pose a threat. If this issue was resolved, the Flood Group could solely focus on keeping the watercourses clear, something it has been doing for over ten years. Participants from other groups talked about the neglect of gullies and watercourses, with councils not having the funds available to them to carry out the work. Another participant stated, 'everyone needs to feel something can be achieved, it gives purpose to the group and money is needed for this.'

Finally, one participant spoke of the 'multiple funding streams available for flood alleviation through different agencies at different levels' and how Flood Groups struggle to understand the application processes for these various funding streams. They called for a simplification of these processes, making it easier for people to get the funds they need.

4.1.3 Members and engagement

Eight participants spoke of how the amount and age of active members was a concern, as well as the engagement of the wider community to flooding. Generally, participants believed more active members were needed to assist with clearing watercourses, raising awareness and other maintenance. Four participants talked about the average age of active members being too high (61+) in their respective groups, something that can be seen from the age data. They called for better engagement from younger generations to ensure the longevity of their groups. This subject was

raised by one participant who called for more investment going into 'how to engage the community' and understanding how to connect with flooding. Exploring this avenue could increase engagement and see a rise in the number of members in Flood Groups.

One participant talked of how she felt her group were 'victims of their own success' and that, because of the work they had done, and the recognition received, the local residents believed they would resolve everything when realistically, they need better involvement, especially from younger generations. In fact, two participants spoke of how engagement was lacking due to the amount of time that had passed since the last flood, and that the best thing to promote engagement would be another flood.

4.1.4 Agencies and authorities

In many cases, Flood Groups must often engage with the relevant agencies to carry out work which has been identified to be addressed. They also have dealings with authorities such as the Environment Agency when applying for funding. Concerns with the processes and polices in place at such authorities, and the appreciation of local knowledge, are two issues that are discussed in the following sections.

Poor communication between the Environment Agency and Flood Groups is a point that was raised by three participants. One participant stated 'the EA need to be more collaborative and communicative at all levels'. Another said they are not practical in their communication, with frequent staff changes causing disruption. Personnel change was an issue raised by another who wrote 'EA personnel changes result in a lack of continuity of actions and sometimes resistance.' Another wrote 'not enough time, resources, money or respect from people in agencies (Environment Agency etc) to be as effective as possible.' These comments help to highlight to the Environment Agency aspects of their organisation that need addressing to help in their work with Flood Groups.

The National Flood Forum was also mentioned by two participants. In one instance they had been assisting a group and then abruptly and without explanation, withdrew their involvement. The group, a single parish group, were unhappy with this as the National Flood Forum were supporting them with advice, support that was greatly needed with the small scale of the group. Local councils also received some attention with 2 participants mentioning they had been severely lacking in their role in clearing watercourses and gullies of debris.

4.1.5 Local knowledge

In terms of flood alleviation, local knowledge can play a key role in the proposal and impact of alleviation measures and can reduce the pre-project costs when aspects of the land are already understood, requiring no consultancy or surveyor's fees. However, four participants raised this issue, with one explaining how the Environment Agency appoint and train Resilience Officers who then do not consider local knowledge, often leading to alleviation projects being poorly implemented and not always in the most effective position.

Another participant had a similar experience with their local Environment Agency (Wessex EA), who had invested money at a local level in people who didn't understand the local area, including the roads, rivers etc. They went on to say 'these people are often trained further, at greater expense and still struggle to appreciate local knowledge. These people often leave the area and leave people uneducated. We should see better local engagement from RMAs (Risk Management Authority) in an environment focused manner.'

Another participant spoke of how their area's District Council have, in the past, ignored local input and knowledge in relation to planning applications made in unsuitable locations. This has seen developments on areas liable to flooding, therefore adding to the issue the Flood Groups are attempting to reduce. One participant explained how there is even a lack of local knowledge and understanding amongst the residents in their own village, with some contributing to the issue by dumping debris in the local watercourse which, in their village, is the main cause of flooding.

4.1.6 Processes and policies

The processes and policies in place whilst working with agencies and authorities have left some participants feeling like there should be change to the current regime. Four participants mentioned this problem, with the processes and policies of gaining funding being highlighted as the major issue.

One issue raised, was the length of time between having a grant accepted and the point at which the funds are available to use in flood alleviation projects. For example, a group applied to the Environment Agency for £110,000 worth of funding in September 2016. The application was accepted in January 2017 with the money not being received until August 2017. They believe the 11 month wait for funds shows the lack of urgency seen in such applications. Moreover, if a flood event were to occur in this time, public opinion for the Environment Agency in this area could have depleted. This point was raised by another participant from another group, showing it is not a localised problem. They had a grant accepted and have still not received the money a year later, blaming the processes and polices in place for not allowing things to happen swiftly, with the participant raising similar concerns about another flood event.

4.1.7 Insurance

The major concern from Flood Groups relating to insurance is the lack of admittance from residents regarding flooding issues with their property. Two main issues were raised: the increase of premiums and the reduction of property values if a property were deemed at risk of flooding. One participant stated people have not come forward after a flood event and admitted their property has been flooded, as they fear they will be penalised by insurance companies. In one instance, insurance companies said they would reduce premiums for a single parish Flood Group (following the 2007 floods premiums were incredibly high) after five years of the village being flood free. At a later meeting, they then said it would have to be ten years flood free. The Environment Agency model was partly to blame as they produced a new map which put one Flood Group's village under water, causing a massive rise in insurance premiums.

There is also a case of insurance companies using surface run off maps in their calculations, something that is not supposed to happen when pricing quotes as highlighted by the Flood RE agreement. In this case, the National Flood Forum were contacted and the Flood RE agreement was raised to the insurance companies. It is advisable to utilise the National Flood Forum in situations such as this.

Finally, the presence of a Flood Group has been noted to be viewed negatively by the wider community, who were concerned with the impact their presence would have on property values and insurance premiums, hindering the Flood Groups' initial efforts.

4.2 The characteristics and methods that promote effectiveness in Flood Groups in England

4.2.1 Structure

The structure of a Flood Group appears of high importance. The resources must match the area the group wishes to cover, so they are not overstretched. This section looks at the different approaches to structure which groups have adopted and why they have adopted them.

For groups focused on a small area, maybe just one village, their structure will be simple but should not be undervalued. Having people in positions of responsibility has worked for groups, with these people being called 'area representatives' or 'area coordinators', their job being to ensure effective communication between their area and the rest of the Flood Group. For one group, whose efforts are focused on one village, area representatives were allocated for each street and their responsibilities only extended to that street. This ensures central two-way communication from residents, to area representatives, and then to the coordinators of the Flood Group.

For groups who find themselves either in the same catchment as other groups or, working along the same watercourse, a forum style group may benefit their efforts. One group talked of how they are in the early processes of making this happen, as efforts by different Flood Groups are not considering each other's actions. In the study, there were two forum style groups. One group incorporated 15-member groups under its umbrella group. Each of these members groups were encouraged to have their own structure and to do things in their own way, which promoted the application of local knowledge and has seen 'great success'. In fact, this group have been instrumental in the formation of a 'Flood Board', a multi-agency meeting focusing on their area and occurring every three months. Because of the people present at these meetings, projects constantly receive the necessary attention and measures are implemented, at a better rate than seen previously.

Another group who had adopted a similar forum structure represents ten parishes. They believe this structure is one of the reasons for their success as they have far more influence than a one parish group. Similar to the other forum group in this study, this group have single parish groups undertaking action on the ground, but under the umbrella of the forum. This allows them to undertake work as they see fit but with the support and backing of the forum.

Another group in the study have adopted a corporate structure which is something not seen in other groups in this study. This structure will be discussed further in the Funding section, as it has played a huge role in the great success they have had in raising funds for alleviation measures.

4.2.2. Funding

As highlighted earlier, the availability of funds for Flood Groups to reduce flood risk is a major drawback holding back groups' efforts. However, through the survey, groups have shown where they have succeeded in gaining grants and funding. It is hoped that the successful methods could be utilised by others.

A formal constitution is recommended by participants, to allow applications for funding from grant giving bodies. Furthermore, two groups recommended linking up to parish councils where possible. According to one group, this link can help provide insurance cover and it is noted they can help with small amounts of funding. One group who made the link to their parish council is also registered as a charity which helps with fundraising and allows them to take advantage of partnership grants. A participant from another group recommended looking to parish councils for initial funding but aired caution when making a formal connection as they had found independence worked for them, as the

local council had different priorities. From listening to all the groups, it seems that a connection with a parish council benefits small, single parish groups rather than the larger umbrella groups.

As mentioned earlier, one group has adopted a corporate structure, which has seen them have great success in raising funds. Volunteering under a corporate banner/legal entity has seen them taken more seriously. The group initially managed to raise £100,000 and then an additional £400,000 at a later date. These funds allowed the group to repair the properties and businesses that were devastated by flooding which forced the creation of the group. It must be mentioned that it was also the skills within the group that helped raise this money as one of the three directors was a skilled fundraiser. Utilising the skillsets available within Flood Groups is discussed later.

4.2.3 Utilising expertise within the group

Nine participants believed one of the reasons for their group's success was their utilisation of the human resources available to them. One participant said, 'no matter who is involved in the group, you need to have the investment of time and expertise from 'experts. Help is important'. This refers to drafting in and paying experts to assist with group efforts, however, some groups have been able to use existing members skillsets to their benefit.

One group has a hydrogeologist, a physicist and a climate change professor who are part of their group. The upshot of this is, they are often more qualified and informed than the people they are in communication with in the Environment Agency, local council etc. Because of this, their views, objections and recommendations are not challenged, and they work in conjunction with the relevant agencies and authorities. Another group has three engineers as part of their group, who have identified the areas in their local drainage system which need to be addressed and highlighted them to the council. Having qualified people as a part of the group reduces the strain on budgets and funding, as groups do not need to hire experts.

One participant recommends basing the group around these core people, who are often catalysts for action. In their experience this had led to the formation of trusting relationships with agencies and partnerships being formed. Two groups talked of forming sub groups where informed group members could come together and spend their time on focused areas, with the overall aims of the group being at the heart of their efforts. One group had great success when they set up a 'resilience sub group' who focused on encouraging residents to apply for the £5000 resilience and resistance scheme. The uptake in their area was around 66%, whilst the national average was around 20%. Another group set up a 'technical sub group', with people who understand and interpret Environment Agency technical reports. According to the Flood Group, this has almost put the Environment Agency on the 'back foot' in their area and made them take the group seriously.

4.2.4 Leadership

It may seem like an obvious point but the effect a great leader can have on a flood group is not just beneficial to their success, it is crucial. Seven participants directly mentioned the necessity of having strong leadership in a Flood Group.

The leader of a Flood Group is the driving force behind the group and their approach will be echoed throughout the other members. An effective Flood Group will have a passionate leader who is persistent, enthusiastic and a great coordinator. It is also beneficial if others can fill this role should the leader be out of the picture for any reason. This allows for a coherent group which will survive in the long term even if people leave.

One group, who have adopted a corporate structure, have three directors, each focusing on different areas they want to target. This approach is unique to the group (compared with other groups in this study) and highlights the benefits of adopting a corporate structure. They are able to achieve more as each target different areas that need improvement.

4.2.5 Approach and appearance

The methods used by groups to approach and deal with people important to their visions and actions can be crucial to their success. These include land owners, developers and agencies. Getting such people on board is often crucial to the work groups are trying to do. Their success starts with their approach to these interactions. Also discussed, is how the appearance of a Flood Group can benefit their efforts and assist them in being taken more seriously and in turn, their effectiveness.

One group spoke of their successful approach to communicating with land owners who, often must be involved in natural flood management techniques. An example is leaky dams, an easy way for Flood Groups to slow the flow in their catchment at minimal cost, as long as they get the land owners cooperation. This group's approach was to make sure they were not trying to tell the land owners what to do rather, try and make them a part of the community. 'By approaching them, explaining what we do, what we want to do and then saying well we have seen ways to help this problem on your land… we have seen a high number saying they are happy to help.' The participant went on to say, 'I believe a good story is key to this, explain the problem, how it has affected people, what we do and why we do it and then talk about the future involving them.' This approach has seen 24 out of 25 land owners approached to be on board with their proposals. Moreover, they went on to say land owners often communicate amongst themselves meaning a good impression can spread amongst them.

Much was discussed about how to approach local lead flood authorities and agencies. One participant believed having a 'polite and constructive' approach but 'waging a war of attrition' is the way to deal such people. Another participant from a different group recommended, from their experience, 'making a lot of noise is not beneficial and instead, launching a charm offensive so to speak, where slowly and steadily we make sure things are happening.'

Another group, who were instrumental in a £121 million flood alleviation scheme after ten years of pressure, talk about approaching relevant agencies in the right manner. 'If you do initial research and data collection that will prove your point then they are not only more likely to agree, but they will take you more seriously in the long run.' He went on to say 'This helps form relationships in a polite and friendly but firm way – we know what we are doing and how to deal with people. Always expect a response and be proactive in getting one.'

One participant gave some advice on how to handle developers, who are often viewed in a negative way. 'I think viewing developers in the right light is key as they are not the enemy and they will not go away. Try to get modification proposals in early (from a flood risk perspective) and generally, we have seen good cooperation with developers.' This message was reiterated by another participant when talking about agencies; 'better to work alongside agencies rather than fight against them.'

How a Flood Group appears to the wider community, agencies and local lead flood authority will also influence their effectiveness. One group have adopted a professional appearance; they have their own logo, business cards and an organised and interactive website which helps them achieve credibility.

Another group utilises its website in a different way. It is open for the public to view and local agencies know this, meaning the Flood Group can use it to their advantage. 'If we are having a particular issue and an agency is halting progress on it, we can post the data we have collected on the problem and then apply gentle pressure to the agencies through the website by highlighting their lack of involvement even though the data shows the need for action.' From the initial research, some groups do not have their own websites and it may be a point to consider. Smaller groups often have a section on parish council websites and this avenue could be explored for single parish groups without a website currently.

4.2.6 Knowing your area and forming links

This section refers to Flood Groups understanding their area, the drivers of flooding and where the key areas are, to be able to monitor these at times of high flood risk. One participant spoke about the importance of local area knowledge and knowing where and who to target.

One group has held practice flood events, ensuring people know their roles in the face of a flood event. The practice bought to fruition some issues the group faced and allowed them to resolve them for future events. One resolution that came from the practice run was the reinstatement of landlines, as mobile coverage was poor in the area and there was a struggle alerting the necessary people. Getting the community together to take part in such practices will help identify areas needing improvement. Again, this is better suited to single parish groups where most people are already connected/known to each other.

The same group runs a 'buddy system' where vulnerable people, elderly or even those away on holiday or at work, will still have their defences put out if a flood threatens, by their 'buddy'. It is an easy way of ensuring the whole community is protected, even if people are unable to do it themselves.

Flood plans are also crucial, not only to smooth operation in a flood event, but also to show the wider community that the Flood Group cares about them and is considering them in their actions. One forum style group's flood plan takes into account actions along the watercourse, in terms of impacts and effects. This negates any negative impact downstream and keeps residents happy and maintains their positive view of the flood group, preventing any friction.

As mentioned in the funding section, forming links with parish councils and local businesses can help raise initial start-up costs. Two participants talked about forming links with universities. They can offer resources in the form of MSc students whom are often happy to get involved in projects when relative to their course. This can provide Flood Groups with skilled researchers who are able to investigate aspects of flooding in their catchment, whose work can provide the basis for proposals to local lead flood authorities or the relevant agencies.

4.3 Recommendations

This section looks at the messages relayed by participants where they feel improvements could be made to help their effectiveness, both at a local level and a government level.

Three participants talked of how they felt there was insufficient information available to Flood Groups and those looking to establish a Flood Group. One participant spoke of a 'one stop' department for Parish and Town councils, and Flood Groups to go to for help and advice on flooding. A similar message was relayed by another participant from another group who called for more proactive communication to let Flood Groups know what events, conferences, grants etc are available. They suggested some sort of information leaflet showing who the local companies, groups,

players are to help people get involved and informed. The same participant explained how they only found out about Defra's natural flood management competition via twitter. Better communication of information would encourage engagement with flooding, not only from Flood Group members, but also the wider community.

One participant spoke of how it can be hard to get the necessary equipment and resources to carry out work that is needed to alleviate flooding and maintain existing measures. They suggested some sort of 'authority shopping list', where the areas that need improving are identified and a list is made with actions to resolve the issues. They continued and spoke of a 'decentralisation of flood emergency stores' as they felt the spread of supplies across the country were uneven and made it difficult for some areas.

5. Limitations of study and recommendations for future work

5.1 Time and budget constraints

Due to budget restrictions, this project was a small pilot study. This meant a very short window for interviewing Flood Group members. This made it hard to organise interviews, as many people have other commitments but, also, many people were away on holiday as the study was carried out in the summer months.

In person, group meets, were more beneficial than phone interviews with it being easier to promote discussion on points, giving more complete data. Whilst they worked well enough, phone interviews were time consuming and less efficient.

A larger budget and a greater amount of time to contact Flood Groups, and to then interview group members would have seen more Flood Groups be a part of the project. Furthermore, this would have increased participants numbers, as there would have been more groups involved but also the potential to get a higher number of participants from each group.

5.2 Knowledge deficit and survey design

An initial aim for the study was to quantitively measure the economic benefit of having a Flood Group present in the community. To answer this, questions were added on: insurance, premiums and excess, and the properties that had seen enhanced protection from flooding as a result of the Flood Groups actions.

Unfortunately, the answers given meant the economic benefit of having a Flood Group present could not be quantified. The majority of the time, people were either:

- Unsure of changes in their insurance policy
- Could not put figures on the change in their insurance polices
- Did not personally live in a flood risk zone so did not have flood insurance

The introduction of Flood RE also changed the insurance prices for many people irrespective of the Flood Groups presence and actions. A better survey design would benefit future work trying to achieve this aim.

5.3 Skewed results

Due to the time and budget restrictions explained above, participant numbers were limited. This meant it was not possible to get an equal number of participants per group, with some groups having one participant representing them and others having up to four.

For future work, results would benefit from an equal split of participants from each group. A more extensive budget and forgiving time scale would help this.

5.4 Qualitative and quantitative

The study tried to focus our survey on quantitative data, giving room for participants to expand on points allowing for qualitative data. However, after conducting the surveys, collecting and analysing the data, it was found the most beneficial information came from the qualitative data. Because of this the discussion focused on these points, as they have a greater message than the other data. The belief is that this data can influence policy makers and assist in the effectiveness of Flood Groups.

6. Conclusions

The discussions had with participants have been insightful and highlighted areas of success as well as areas that should be addressed by policy makers.

6.1 Recommendations for Flood Groups

- Depending on group characteristics, look to link up with Parish/Town Councils and local businesses which can help with initial start-up costs.

- To work alongside and in conjunction with agencies, councils and other residents. Have an approach that is polite and constructive but one that is assertive.

- To consider whether the Flood Group's current structure is the best fit. If a group is working in the same catchment or along the same watercourse as another group, consider contacting the other groups and establishing a forum style group.

- Try and engage younger generations in the Flood Group to ensure the group's longevity. Social events and working parties are a great way to do this.

- Form links with universities where possible as students can help with research and data collection, which can form the basis of funding/flood alleviation proposals. Typically, this will be cost free as students need projects to complete BSc's/MSc's.

- To appoint a strong, passionate leader with a clear direction for the group. Reassess leadership if the current leadership is not as effective as it should be.

- To utilise the human resources available to a group. Having a group with some highly skilled members or influential land owners can add influence to the group and see them be taken more seriously which, in turn, will aid their effectiveness.

- Try to work with developers rather than against them. Get modification proposals in early and encourage as many local residents as possible to do the same.

- To understand the area's flood risk, how it happens and when it happens. This can help the group's aims, identify areas that need addressing and work out actions to alleviate such threats.

6.2 Recommendations for Policy Makers

- The Environment Agency need to address the way in which they communicate with groups and ensure consistency, as highlighted by participants' concerns.

- The Environment Agency should have a greater acknowledgement of local knowledge as it can often save people time and money.

- When employing resilience officers to an area, the Environment Agency should encourage considering local knowledge and even consider employing people with local knowledge prior to their appointment. This would mean a more informed resilience officer, who may be known already locally and could save on initial training costs.

- There should be a simplification of funding/grant applications but most importantly, better availability of information on where to gain funding assistance in gaining it.

- There is a call from participants for a decentralisation of emergency flood equipment stores as the current provision doesn't cater for everyone.

- Better availability and quality of information on flood related events, expos, talks etc. Highlight the major players, in terms of flooding, who are present in an area. This would help raise awareness in an area and promote engagement. Areas targeted for better information could be focused on where Flood Groups are present, who could help with the distribution of information.

- There should be more scrutiny of insurance companies. There are cases of where they have tried to take advantage and profit from flood victims and those at risk of flooding.

- Although unlikely, consider the impact of continuing to develop floodplains. Housing targets push for continued building but maybe these developments could happen outside of river basins.

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