REPORT

‘Contractual’ and ‘cooperative’ civic engagement: The emergence and roles of ‘flood action groups’ in England and Wales

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Received: 8 February 2014 / Revised: 20 June 2014 / Accepted: 1 November 2014 / Published online: 12 December 2014

Abstract Devolution of responsibilities is transforming how flood risk is managed in many countries. Research assessing the emergence and role of a new element in the governance of flood risk management in England explored the numerous ‘flood action groups’ that have developed over the last decade. We identified two broad categories of relationship between the public and authorities. The first displays ‘contractual’ characteristics: a level of protection provided by the authority in exchange for taxes or similar support. The second embodies a ‘collaborative’ relationship: public knowledge, social and financial resources are equal and complementary to those of authority, and seeking ‘collective security’. In general, the former were more successful than the latter, but common lessons were that success in FRM should not be defined purely as the ability to prevent flooding, but as the ability to access a variety of resources across different levels of society at different stages of flood risk management.

Keywords Civic engagement · Contractual · Cooperation · Floods, England and Wales

INTRODUCTION

In many parts of the world, the management of flood risk is changing, driven by shifting governance arrangements (Sayers et al. 2014). Thus, between 2010 and 2015, flood risk management (FRM) in England could be transformed from 98 % of expenditure being funded by the central state to perhaps 90 % of projects requiring ‘partnership funding’ (PF) involving local/central cost-sharing (Environment Agency [EA], 2010; Defra 2010). Already some 36 % of FRM schemes had some form of PF in 2012/13, rising to 71 % for the 2013/14 new entrants (McNally 2014). The change reflects a re-delegation of responsibility: a response to the recognition by the national governments that

flooding under increasing climatic and development pressures can pose threats to individuals, public services, the tax base, and the economy (Wilby and Keenan 2012). As traditional stakeholders assess their revised flood vulnerability (Johnson and Priest 2008), the public are expected to reconsider their position and possible role in relation to the flooding that they face (Defra 2004).

Our concern here—to contrast contractual and cooperative forms of civic engagement—is based on two interpretations which hold merit in the literature. The first is grounded in post-Marxist theory, and suggests that the emergence of collective action is motivated by a threat to the public good, stimulating civic action to defend against the perceived tyranny of Authority (Young 2000). A contradictory, second, standpoint views collaboration between the public and relevant authorities as a source of empowerment for all stakeholders (Giddens 2013). These pro-collaboration theorists argue that the promotion of active citizenship can maximize knowledge and skills within a community, a goal achieved by re-delegating and devolving power and responsibility to the relevant locality.

The belief in the existence of a contract between society and state is not new (Hobbes 1651 1969). Yet, the concept gained significant ground during the 1980s when voluntary organisations and community groups emerged with the aim of overcoming tyrannical regimes mainly in Europe (Powell and Geoghegan 2004). These groups fought against breaches to the social contract in which the State no longer provided the services expected by taxpayers and citizens. The groups gained power by acting collectively, reminding Authorities of the value of social capital in addition to financial and legal resources. In agreement with post-Marxist assertions of the need for a separation of authority and public (Young 2000), these groups saw a clear distinction between the activities of the State and its

Citizens, with that degree of separation thought necessary to prevent the public being inadvertently utilized as puppets to enforce control and oppression (Powell and Geoghegan 2004). The result is that the presence of civic engagement represents an underlying and continuous tension between authority and civil society (Young 2000), with little opportunity for collaboration and sharing of a limited range of State-defined resources.

The key difference between cooperative and contractual forms of engagement is the degree of separation between the roles and resources of the public and authorities. A cooperative form of participation encourages the disintegration of boundaries associated with social contracts, and therefore represents both an ideological shift toward ‘deeper democracy’ (Prugh et al. 2000), and a more practical move to deliver public services at the most efficient scale (Hayek 1945). In this scenario, the variation in resources valued as useful in targeting a collective issue is far greater, including local knowledge, personal awareness, and social networks, and the skills which must be held by participants to access those resources are more flexible. The outcome of cooperative participation is therefore a symbiotic relationship between society and state, in which collaboration is a pre-requisite for efficient, sustainable solutions.

APPROACHES AND METHODS

In this research, a rigorous technique for identifying the contractual or cooperative relationships was not always possible. But when cooperative and contractual forms of civic engagement are contrasted, it would be expected that the methods of managing flood risk which groups develop would differentiate in response to the perception of the source and range of resources valued in the management of flood risk. In many cases, the situation was clearly either a contractual relationship (e.g., a written agreement between the Environment Agency and the flood group) or a cooperative partnership (e.g., jointly organized meetings; agreed agendas; cost-sharing). However, in a few cases, the distinction was blurred, requiring us to make judgements based on the available information, with truly blurred situations themselves raising the question of whether participation was to forward ideals of deepened democracy in civil society (Prugh et al. 2000), or to ensure efficiency of solution, even if that efficiency marginalized the ability of some members of the public to participate, or elements of both at the same time.

But in operationalizing our research we did seek to uncover the different motivations underlying contractual or

cooperative relationships. An ability to differentiate between the motivations which lie behind different forms of participation—as we show here—is important as it allows authorities to identify whether the aims of flood groups are appropriate to the manageability of the flood risk. Flood issues with a clear delegation of blame and a simple solution can be tackled effectively with ‘people power’, and do not require, and might even be constrained by, the resource-intensive methods necessary in cooperative approaches. However, in more complex flood issues, where absolute prevention of the flooding—major or minor—is not possible, a cooperative approach allows relationships to be built which proves vital in streamlining the future interactions between society and state, and tapping into social capital in the event of a future flood.

The associated public engagement activities are also different. The post-Marxist standpoint requires a strengthened democracy to ensure justice and reaffirm accountability, while a collaborative approach encourages communication and an efficient sharing of responsibility. This continual contradiction between the two ideologies behind civic engagement raises questions regarding the forms public engagement in FRM might take, the pre-requisites influencing those forms, and the risk outcomes associated with different public interpretations of their involvement. These are questions we seek to address here.

For our methodology we adopted an inductive approach, locating our research within contemporary ideas concerning how civic society becomes involved in environmental management. In terms of method we located areas identified as being at flood risk, where we identified the existence of flood groups, either via the National Flood Forum (using both existing and cached pages to identify disbanded groups) or by a wider web search and via circa 250 personalized e-mails.

From some 100 groups, we received 25 useful responses. We proceeded with telephone interviews initially and, if invited, also visited in person, using ‘empathetic neutrality’ to gain interviewee attention (Denzin and Lincoln 2000). When visiting an area we talked to a number of different residents and stakeholders involved in FRM, thus, in total we held circa 40 interviews across 25 locations; local specificities are detailed in Geaves (2012). In areas where no flood group existed we contacted local residents who, from blogs and newspaper reports, appeared to have influence, and the same interview procedure was applied. All recordings were transcribed and analyzed using the Text Analysis Markup System (Weinstein 2012) to explore our two main interconnected themes: how and why the groups emerged (or did not), and what they saw as their role in flood risk management in relation to the PF initiative.

RESULTS AND DISCUSSION

Engagement issues and dilemmas

From our research we judge this could be the case because, first, the public are expected to adopt roles traditionally held by FRM authorities, which they find difficult to accept because it generally carries unwanted responsibilities. In the past, the general public were expected to be aware of flood risk but do not participate in project planning or management, which was led by regional committees supervising professionals (Penning-Rowsell et al. 1986). Today they are required both to be risk-aware and to work collectively to develop FRM solutions. Giddens (2013) argues that engagement in the UK is dwindling, but a strong ‘volunteering’ culture exists. Thus, “In 2009/10, 10 % of people (were) ... involved in civic activism,” while 54 % of adults had volunteered, formally or informally (Harker 2011, p. 5), suggesting some doubt the public will move far from non-civic volunteering.

Secondly, public involvement in FRM is hindered by the necessarily complex institutional arrangements and the confusion caused. Responsibility is fragmented (the EA; utility companies; Local Authorities, etc.). As Buchecker et al. (2013) discuss, ordinary citizens are often unaware of these categories of authority and their different responsibilities, and struggle to connect with the appropriate FRM institutions, whose staff were often not trusted by the public yet held key resources (see Harries and Penning-Rowsell 2010).

The third barrier to active civic involvement is awareness. Flooding takes many forms—riverine, surface, coastal, groundwater, etc.—with different risks and intervention strategies (Pitt 2008). Flooding is also episodic, so areas deemed at risk may not experience a flood event within a human lifetime, yet only those who experience a flood have much understanding of its character: people are trapped within a ‘prison of experience’ (Kates 1962). The EA’s role in retaining the ‘collective memory’ of FRM is further weakened by the devolution of responsibilities to local communities (Johnson and Priest 2008).

Another issue, fourthly, is identifying when the public’s involvement is practicable (Geaves 2012). Clearing drains often requires road closures. Building a flood wall needs engineering expertise and access to the river. Both require power and authority; only with flood insurance, property level protection, or raising funds for a FRM authority’s scheme can the public act more or less alone. As such, FRM authorities are likely to encourage such fundraising and improved awareness schemes, rather than activity ‘on the ground’. And if fundraising is the preferential form of participation, this could marginalize community members without those skills—in a state-defined currency—and

those for communicating with both ‘state’ and ‘society’. Pertinent here is Kisby’s (2010) suggestion that ‘Big Society’ schemes can be exclusionary and Hayek’s (1945) question as to whether public participation should focus on creating efficient solutions or strengthening democracy.

The drivers of emergence

To understand the current situation, we need to understand how the ‘flood action’ groups emerged or, in some cases, did not (Fig. 1; hereinafter groups are identified as numbered there (e.g., ‘11’ or [11] for the Alney Group). Our results show that this emergence was dependent upon the scale of the flood ‘disturbance’ (Rykiel 1985), the form of governance and the existence of pre-existing action groups, and the location involved and its levels of economic deprivation.

The scale of the flood disturbance

All floods led to some form of public engagement with FRM by the groups we surveyed, but the smaller floods were more likely to encourage participation through existing nodes of social capital, rather than via new flood groups (Fig. 2). These nodes include residents’ associations, anti-development groups, and generic environmental action groups. The larger flood events led to the formation of designated flood groups, although all had different priorities and approaches. The emergence of action regardless of flood magnitude was surprising, given social-ecology theory suggesting a change will only occur if a flood disrupts daily life (Lichterman 2009).

For groups 15, 18, and 20 flooding had been minimal: high river levels, blocked drains, or a heightened EA warning. These residents were concerned about the threat of increased flooding and joined together to forestall any rise in insurance premiums. Group 15 became interested after the EA suggested their flood risk might be upgraded, but indicated they would only take real action following a flood: “It’s only when your feet get wet that it gets your attention.” These groups did not view flooding as their primary concern, but were happy to represent their local community when that issue arose.

Groups which emerged as a result of smaller more frequent flooding had a contractual, relatively binary view of the distribution of responsibility for flooding—flood versus no flood, responsible authorities versus irresponsible citizen—with this impacting the longevity of related action, promoting resilience, and preparedness for future risk. For example, group 22 viewed unresponsive authorities as the cause of the flood problem, with the private water company not considering overtopping of toilets as a flood event and therefore remaining inactive: contrasting definitions

Fig. 1 The groups etc. interviewed and those contacted but not interviewed

Fig. 2 The number of groups initiated to manage flood risk, per year, in relation to the relative magnitude of flooding

separated the consumer and water utility. In response residents collectively approached the authority through the local residents' association, thereby pressurizing the company to review its flood definition. This situation supports the post-Marxist belief that Authorities and public must be separated as at any time the Authority can (re)define the boundaries of a problem, and without collective pressure the public are in a weak position to challenge that Authority.

For smaller flood events, public participation emerges in the form of pressure groups, with the aim of persuading an Authority to take responsibility for a flood, but without necessarily encouraging community-wide participation:

I wouldn't want you to think that all the residents are active. As with so many of these things, we have a nucleus and then the other residents here are kept informed and then if something significant does come up that affects a lot of people, then you get more people playing an active part [20].

A designated flood group is more likely to emerge following flood events large enough to obtain local press or wider media attention (Fig. 2). Participation here is dependent upon the location of the area flooded, and the reaction of the relevant authorities. Groups in rural areas felt that their villages would not have a high enough priority:

After the 2007 flood.. me and a neighbour decided to find out ...who was responsible for those things. And then it turned out that a lot of the resources were obviously going into the ... Oxford and Abingdon. So a small village like ours would get pretty low priority. So we decided that we would try and do something ourselves [13].

The direct action groups which emerged did not attempt to pressurize authorities, but instead chose to replicate their

tasks, including clearing the river of vegetation (seen as inhibiting drainage), creating warning plans, and installing river gages. These hands-on groups took on the role of authorities, but did not necessarily accept responsibility for the impact of their actions or the occurrence of future flood events. The PF scheme could potentially benefit the rural groups who would like support, with at least some grant aid to complement pre-existing resources:

At the end of the day it got us a few pennies from the council to buy tools and equipment and so on for the village and regularly, well annually I suppose or biannually, twice a year, clean the river through with the waders and everything [12].

Governance enhancing issues: conflict, responsibility, and mediation

Many groups emerged in a context of conflict with the authorities regarded as in charge of FRM in their locality, exacerbated when these authorities judged that the public would blame them for a breach of some form of social contract. The groups then generally formed as a result of third-party conciliations.

Groups contacted by a neutral party such as the National Floods Forum (NFF) fared best in terms of managing conflict with other stakeholders, followed by groups contacted by their local councils. Those not contacted at all had turbulent interactions both with authorities and among themselves, often leading to the group disbanding. Group 23 was among the first category:

Within 24 h my wife had been contacted as the chairman of the residents' association by an outfit called the National Flood Forum... [The NFF] said we needed help... can we... help you put together a flood action plan to prevent this sort of thing from happening again?

With NFF assistance, a meeting was held between residents and the EA, Southern Water, the Highways Agency, and Havant Borough Council. The neutral chair made it clear that the meeting would not be a 'finger pointing' exercise of blame allocation, but a way of collectively developing strategies for flood alleviation within Emsworth Borough:

(The experience was) A sort of a eyeopener because so often you get a situation in a public open meeting, particularly where everybody stands up and says it's all your fault.

Groups described positive experiences when they felt that the problem had been agreed by all stakeholders in initial meetings, and then saw success when authorities displayed an equal commitment to tackling the flood

problem, giving the groups freedom to contribute to a solution. Managing to raise £50 000, group 3 saw the EA as being equally committed as themselves:

The EA... have been supportive of the group as it was set up, they've been supportive all the way along and certainly they have moved heaven and earth to 'get up steam' for us [3].

In contrast, in Cockermouth, it was the local authority which initially promoted its group's emergence, although this was not always unproblematic:

What happened after the flooding is you get all these people coming in from the top... telling you what you do. And you're thinking no, you don't know my community... and that was one of our big things about working with the Environment Agency and everybody.... We are the people who can solve it. So I think this local flood action group was important from that point of view [2].

Despite initial conflict, group 2 was a success, raising £340 000 to part-fund new flood defenses, but even as a success story and a beacon for PF, the group described continuing conflict with their local authority:

We've not been impressed with our own County Council, we've done the most and they're distant towards us Why did we need to form a pressure group to make things happen? Surely the Town Council should have thought of that. They're just interested in car parking costs and things like that.

Public involvement—aided by third-party support—pressing an authority to take up its responsibility appears to be effective in the short term in promoting the emergence of cohesive groups. But this 'watchdog' approach means that these groups are generally unlikely to contribute funds: they perceive the problem as being with the relevant authorities not honoring their responsibilities, and local contributions as an unwelcome new tax:

I can't quite see residents around here putting their hands in their pockets unless it was a really grave risk, and probably even so, I think the reaction of a lot of people would be "well, this is what we pay our rates and our taxes (for)" [20].

Furthermore, the scale of resources necessary for significant risk reduction is seen as potentially beyond the residents:

It would've been prohibitive for the local residents... we'd have definitely struggled to try and get funding from people that were being protected if you know what I mean [1].

In such instances, the public are unlikely to raise funds for FRM. However, where there were smaller floods caused by surface and groundwater flooding, alleviated at relatively low cost, then perhaps a clearer analysis of causation could be promoted by the authorities concerned to encourage a suitable form of participation and cost-sharing.

The location and its deprivation: the non-emergence of groups

In some cases, despite the correct ingredients—a large flood, a neutral party, and good governance—public engagement did not emerge. The cause appears to be poverty, as with those interviewed on Merseyside [7] and at Kingston-Upon-Hull [5] (chosen because they are in the top decile for deprivation in England).

Group 7 attempted to create a resident's association to deal with future flooding:

We did try and get the locals to make a residents group. One of our trustees ... was quite prepared to go over there and show [residents] how to start a [residents' group] up but I think at the time it was just one thing too much... The reality was they had no money, they had no money to get their kids to school. If you are living on the edge of poverty all the time [7].

These residents could not afford to invest themselves in such groups, but the Red Cross and the local Council provided significant help. However, in Kingston-Upon-Hull, a different scheme was established in the absence of the emergence of active flood groups. A residents' association—the Goodwin Trust—was purchased by the local Council, employing its staff. Following the major 2007 flood, the Council used the Trust to survey which residents needed most support: for the Council, many flood-affected parts of the city were "No go" areas and using Trust workers meant help could be given to those difficult to approach:

When I was doing the case work knocking on the doors, some of the people I went to see, I have seen before through my job anyway. They see me round and about or through community groups... straight away there was already a rapport ... so I think it put a bit of trust in there.

In such areas, it would appear that engagement with FRM will be reliant upon charitable organizations and local councils, and any local funding sourced by parties other than the general public.

Table 1 Groups which perceived a contractual relationship between themselves and authorities. Groups marked * have disbanded; groups marked with † only aimed to build new flood defenses and had no other FRM strategy

Separate from authority			Additional to authority
New defenses	Maintain defenses/infrastructure	Prevent development	Hands-on maintenance
Kirkbymoorside Flood Prevention Group	Little Stour and Nailbourne River Management Group	Dinnington and Anston Save Our Greenbelt Action Group	Ock Valley Flood Group
Haydon Bridge Flood Group*†	Oxford Flood Alliance	Little Chester Residents' Association	Naunton Flood Group
Alney Flood Group*†	Loddon Valley Residents' Association	Loddon Valley Residents' Association	Hanneys Flood Group
Montagu Road Action Group*†	Hinchley Wood Residents' Association	Emsworth Residents' Association	
Bin Brook Action Group	Ashted Residents' Association	Ashted Residents' Association	
Little Chester Residents' Association			
Emsworth Residents' Association			
Oxford Flood Alliance			

The roles those engaged saw for themselves

The way groups emerged gives some insight into how they then operated. Pursuing these *modus operandi* we also identified two broad categories of relationship between the public and FRM authorities.

The first displays 'contractual' characteristics, with a level of protection provided by the authority in exchange for taxes or similar support (Adger et al. 2013). This kind of perceived necessity for a separation between public and state is explored in a contested collection (Prugh et al. 2000; Giddens 2013) of post-Marxist literature (Gauthier 1977; Young 2000): the only way the public can avoid becoming 'puppets' is through such a social contract (Powell and Geoghegan 2004). For the public, a flood represented a breach in that contract, with them either forming pressure groups to challenge this breach, or taking over the neglected role of the authority, the latter implying an acceptance of that contractual breach.

The second category displays a 'collaborative' relationship between authority and the public. The public thereby view their knowledge, social, and financial resources as equal and complementary to those of authority, in the search for 'collective security'. Reflecting the relevant international relations research (Organski 1968; Tammen 2000), the pre-requisites for collective security against flood risk would include all stakeholders agreeing on the flood problem, an equal commitment to tackle that problem, and identical freedom to join into act collectively upon decisions. The concept contradicts the idea of state and society being separate, requiring collaborative interaction between stakeholders from the outset.

Lobbying in relation to some social contract

Many groups perceived themselves as pressure groups, rather than action groups, aiming to persuade authorities to invest in FRM, rather than contributing their own resources: the authority is the 'target', with the groups' role perceived as separate or additional to authority (Tables 1, 2). This form public engagement raised a number of concerns for us regarding the effectiveness of engagement in FRM.

The first issue of concern is that lobbying groups we interviewed focused on decreasing the flood hazard, not the flood risk, and the latter reducing the consequences of flooding, as well as its probability. If a flood system had an easily identifiable and unwavering source (Pahl-Wostl and Hare 2004), reducing flood probability could be effective. However, lobbying groups were surprised to find that despite their efforts in pressurizing an authority into building a flood defense (to a particular standard), flooding still continued. Thus, group 1 had lobbied for new flood defenses, which were later found to be inappropriate to future flood events, and which were breached again following our interview.

A lobbying role also meant that the 'risky' aspects of flooding (i.e., the uncertainty of timing, source, magnitude or spatial distribution of a flood) are not acknowledged or understood by the local population:

There was no need for anything like that. The things were sort of happening spontaneously from their [the EA] end; they realised that they were liable if anything happened again and they knew about it [1].

Table 2 The outcomes of flood groups approaching flood risk as a collaborative process

Payment for outcomes/partnership funding	Warden scheme	Emergency plans
Cockermouth Flood Action Group £340 000 raised through council precept (£150 000), plus individual and charitable donations	Cockermouth Flood Action Group Designed to take over from fund raising group	Nauntun Flood Group Water meters which are sent to specific members of the village
Keswick Flood Action Group £50 000 raised through book sales of local memories of the flood event, plus individual and charitable donations	Keswick Flood Action Group Designed to take over from fund raising group	Emswoth Residents' Association Direct contact in Authorities in case of flood Operate own pump in most at risk area
	Par and St Blazey Flood Group Water meters which text ~100 wardens over the area Wardens who advise the vulnerable on insurance	The Hanneys Flood Group Water meters which directly upload to website for everyone to see
		Par and St Blazey Flood Group The most vulnerable people in the community could be located in case of an emergency

Fragility is the second cause of concern: all such flood action groups disbanded after new flood defenses were provided, despite residual flood risk remaining:

They [the EA] were obviously keen that there was a group there in case there was another flooding issue... particularly while the defences were inadequate (but)... they've never put any pressure for the flood group to carry on.

A third concern was the number of cases of conflict between stakeholders. Repeatedly, lobbying groups described turbulent interactions with authorities:

I don't think our relationship [with the Council] is that good. But, we're trying to exert influence... (and) the only thing that we've got... is... a mass of people.. The leader of the Council wanted us to meet immediately, and we said "No," because one of the rules we made was ... that we wouldn't play their game because they are winners at their game, we would have to play some other sort of game [6].

Lobbying groups, unlike other flood action groups, were more likely to believe in a conspiracy behind the lack of action from authorities. Group 6 believed that there was a pre-existing agreement between the developer and local authority:

Whether they maintain their end of the bargain I've got no idea. Because they still don't trust us. But, we're still working with them...we don't trust them but we think it's worth exploiting.

Such conspiracy theories may reflect the local authorities' antipathy with the public seeking a contractual as opposed to a collaborative relationship. But our lobbying groups frequently misunderstood their capabilities, stating that all they had was 'enthusiasm', or a 'mass of people', and not recognizing the knowledge, social, and financial resources they also brought to collaboration. A local authority which shares this narrow view runs the risk of overlooking flood issues identified by the public. Thus, group 4 could not get their local authority to recognize or take responsibility for flooding. These groups disbanded, and members individually lobbied for household-level flood protection, to which the local council contributed. However, the overall flood problem remains:

We were flooded in 2005, 2007 and again in 2010. And ... nobody was really taking much notice at all. It was flash flooding, there's no river; we're halfway up a hill....But we couldn't get anybody interested...The Environment Agency weren't interested because they were only interested in ... river flooding.

Groups 1, 4, and 10 indicated the decision to become a lobbying group was not necessarily their own or seen as always successful. Also:

It's not, not a partnership as such because there isn't a sense of equality there. [The Authorities] can always turn around and say "we've heard what you said but we're going to do what we want to do"...I think up to a point where if we hassle them to much they'll start

to talk about things like, well, for example with our ponds if we hassle them on maintaining too much they would fill them in [15].

However, the outcomes of lobbying for new defenses were not solely negative. New networks were created within a community and with the EA, easing future transactions. Residents' associations' lobbying appears particularly beneficial, as they hold a community memory, already had key skills, and do not disband following the development of flood defenses. Flood roles can therefore be reactivated in the case of emergency, leaving the community less vulnerable to future risk.

'Direct action' as a priority role

The second form of flood action group was those that recognized a social contract between state and society, but did not expect the relevant authority to mend the breach that flooding represented. These groups took over the authority's role, managing the flood risk by maintaining the river themselves. Other groups felt that this form of participation was "no longer considered good practice" [21] with the concern that "it means that the Environment Agency doesn't feel the need to do it" [10]. Demonstrating a reduction in flood risk following direct action was not our research aim, but the value of this approach could be gaged through examining changing accountability for FRM, the ease of interactions with Authorities, and the uptake of novel methods of FRM by participants.

In terms of demerits, the accountability of flood groups involved in direct river management was a cause of confusion and concern. Issues included the potential to move the flood problem downstream, and the immediate accountability in carrying out the work of local authority staff who were trained and insured. Group 16 was frustrated by their local authorities' resistance to their activities, and ultimately required to train members to use machinery and wear-specific clothing before working in the river.

This encouraged two outcomes. First, the authority relocated accountability for clearing the river from itself on to the flood groups. Second, the public then undertook the exact same task as an authority's employee, unpaid and uninsured. The boundaries of acceptable action were defined by the authority (usually a local Council), and, as such, participants became unpaid workers. Many groups were concerned that the Council might consequently reduce its own staffing, potentially leaving the public more vulnerable than hitherto (groups 3, 10).

In only one case did the local authority act in a way which implied shared accountability for the actions of groups: group 25, established by the local authority, was

granted Cornwall Council Volunteers' insurance, and received £4000 from South West Water (the private utility) for training to clear their river.

A main source of conflict was the allocation of responsibility. However, where the groups' activities were perceived by the authority as informal (groups 12, 13), responsibility was not raised as a concern and relations between authorities and the public appeared far more amicable: these groups were in rural locations, with members often already in contact with key members of the authorities:

I have got quite personal with a lot of them [local authority representative]. Nicely personal. Hello Tom, hello Janet, hello so-and-so, that sort of thing [12].

The success of this type of flood group can be assessed by some demonstrable action. Groups were also seen as successful even if they had only improved their awareness, and potentially reduced the probability of flooding when otherwise their situation would remain unchanged:

Some flood groups are much more the lobbying types...they actually try and persuade people to do the work. And then there's the other groups that tended to have a fund raising part in order for another organisation to carry out it's flood defence work. And ours is the third type which is probably less common which is much more of we'll actually do work ourselves ...We're a small village and so if we were expecting another organisation to come to our rescue we would be certainly be low on the pecking order [13].

But 'direct action' is broader than active river maintenance, including targeting the vulnerability aspect of flood risk as well as flood probability (Table 2). Both groups 12 and 13 produced booklets with key contacts and advice in the event of a flood, and had river gages assessing river levels, in addition to hands-on maintenance activities. Greater awareness of flood risk is reflected in the increased number of residents investing in property level protection—"a lot has come about from people having designed equipment to go to doors and windows and so on" [12]—and residents' support of their river gage through community-derived finance:

Another thing that we did get, again through common sense really, was a water level meter that we installed, and, again we got that money from the council, but the future is ours [12].

Groups embracing this kind of diverse range of activities were successful in developing a comprehensive approach to managing the different aspects of flood risk. Similar to

the findings of Lane et al. (2011), the public are capable of gathering and disseminating data and are aware of the causes of hazard outcomes. Ostrom (1999) suggests that to be resilient a community must be self-regulating and able to survive without external support. The local groups' ability to decide a flood gage was necessary and to share its results indicates this independent ability to learn and adapt to changing flood risk.

Overall, the groups which believed that they achieved a higher level of risk reduction were those which took on responsibilities traditionally held by operating authorities, gaining new skills and greater understanding of flood events by documenting river levels and targeting specific locations at risk, in addition to maintaining the river. They focused on both the hazard and vulnerability aspects of flood risk, identifying those who were most vulnerable, uninsured, or at particular risk during a flood event.

The fundraising role

Many flood groups described raising funds to administer their group, but no groups considered the sums the PF scheme suggested communities contributed were practicable: 'prohibitive' [1], and "this is what we pay our rates and our taxes for" [20]. Yet, groups 2 and 3 raised £300 000 and £50 000, respectively, a goal groups pursued through lack of choice and necessity. Despite this, groups described their communities as positively changed by the experience:

It looked like the scheme was going ahead and then, of course, the economy sort of nosedived and... we then ended up with the EA turning to us and saying... it would help if the community could raise some money. So... I was not comfortable... but did manage in a matter of a few weeks to raise £50 000. A lot of it from... individuals, a number of whom were not actually flooded but were very supportive [3].

Local fundraising to cover costs wider than flood group administration requires collaboration (especially with the FRM authority concerned), abandonment of blame, and a sense of altruism so that a flood defense scheme benefits the community as a whole, not simply those who contribute. Indeed the funds raised were not predominantly donated by individuals benefiting from new defenses, but by the general population (including through a Council Tax precept). Often, the members of the relevant groups were a mix of those who had and had not been flooded.

Once communities realized that they would need to raise money, the next problem was how this might be achieved. Group 2's leader described the challenge of initiating contact with authorities responsible for managing flood

risk, especially when those authorities believed they would be held accountable by the public, had the group adopted a 'breach of social contract' approach:

I couldn't get them all to the table, so I went to see my local MP [Member of Parliament] and he wrote to them and got them all around the table, and... we've kind of grown from there... He's kind of my trump card, shall we say?... I'd never even met him prior to that.

The flood meant that she had to establish new networks, initiating government and civil society partnerships, and beginning to make hierarchies more porous. But

When we first started working with them [the EA] they were quite defensive, they were a little bit aggressive towards us, but when they realised that we weren't going to attack them... then they treated us as team members and we are looked on as part of the team now.

In their partnership, group 2 was asked to raise £300 000 out of a total cost of £4.4 m, and obtained large contributions from the Rotary Club, the Lions, and the Cumbrian Foundation Fund, followed by individuals' personal cheques and local school contributions: "a real community effort." However, a shortfall of £100 000 remained and a community-led initiative proposed a precept be added to the town's Council Tax bills:

What we did was we asked the Town Council if they would set a precept of the council bill and they... said that's okay, but we're going to ask people in the town if they agree to that, so they did... a vote... It got something like a 70% 'yes' vote... That raised £120 000.

Citizens paying compulsorily through their Council Tax bills could have been highly controversial if the local public had objected "that is what we pay our rates and our taxes for." Yet, the residents of Cockermouth recognized that the situation did not call for a simple contractual relationship, and that the need was greater than a normal local taxation situation. But the group's Chair believed that if there was another flood the same effort could not be repeated: the situation was unique.

The methods developed by fundraising groups were novel and successful, although few in number. The necessarily diverse activities involved redefined the relationship between stakeholders and established a new outlook for relevant authorities:

Before this I could not even get them to answer a phone... whereas now I've got personal contacts ...We're dead proud of what we've achieved here.

We had the Under Secretary, I showed him that we have looked after ourselves and done a great job....The Environment Agency has never ever worked at that pace before and I think it has actually changed their culture [2].

The PF scheme cost residents significant time, capital, and effort, and such approaches may not be so readily adopted in deprived communities or where the issue is repeated surface water flooding rather than ‘exceptional’ fluvial flood events, as at Cockermouth in 2009.

CONCLUSIONS

We have suggested that there may be two ways in which the public might interpret the call for increased public engagement in FRM: either as reflecting a breach of the state’s social contract, requiring public counter action (Young 2000), or as collaboration to maximize the efficiency and amenability of response (Giddens 2013), in our case to flood risk.

In our research, the contractual interpretation of civic engagement is dominated. This may reflect our interviews taking place in the early stages of PF, or a result of the public’s perception of a citizen’s role, or as product of initial poor relations with authorities responsible for flood risk management. A contractual relationship is convenient as it clearly delegates blame, and, if a breach of contract is accepted by both parties, the party at fault is obliged to rectify the situation. Contractual approaches thus emerged where flood events were smaller, with the source more easily identifiable and responsibility thus clearer.

Despite post-Marxist assertions of a need for separation between authority and public (Young 2000), our research shows that such an approach is not always beneficial. Contractual approaches limit the longevity of flood group activities and prevent good understanding of the probabilities and aims of flood risk management strategies. Significantly, a contractual approach is less effective in deprived neighborhoods than in wealthier areas, where deploying social and financial capital can effectively pressure an authority to take action.

A minority of our flood action groups did follow a collaborative approach in addressing the flood risk they faced but, as Giddens (2013) suggests, the formation of a community reflective of the ‘third way’ ideology was challenging and required a catalyst to initiate activities. This catalyst came in the form of either the request to raise more funds than the local populations were willing to provide, or when a neutral agent became involved, such as a National Flood Forum representative.

In this second situation, the neutral agent facilitated collaboration by redefining community resources and knowledge, overcoming traditional perceptions of public/authority power imbalances. But such collaborative approaches are time intensive. Where there has been a high magnitude flood event which is likely to reoccur, such an approach is beneficial: the public are not only empowered with traditional flood defenses, but also with an acceptance of a repeat flood event, and cemented by the formation of flood warden schemes. Thus, a public ‘collective memory’ is retained by individuals connected locally and able to communicate with both responsible authorities and the public. A collaborative approach can thus mitigate both hazard and vulnerability dimensions of flood risk, although resource considerations may limit its appropriateness for all situations.

In relation to parallel and highly relevant research, Lane et al. (2011) show the importance of local knowledge in building computer simulations of flood events, demonstrating that cooperative approaches widen the resource base available to manage flood risk. Adger et al. (2013) discuss the potential revision of social contracts under scenarios of environmental change; we go one step further than this, suggesting that cooperative approaches eliminate the social contract. A social contract requires an underlying tension between society and state (Young 2000). We conclude that, in order for civil society to exist, tension must be removed, and this can only be achieved through a more flexible definition of responsibilities. The existence of a social contract allows the State to define what resources are applicable to managing flood risk; however, we are seeing the public and authorities redefining those resources together.

Our results show that the importance of participation does not only reside in the existence of civic engagement, but also in the form that engagement takes. That form is influenced by contextual features determining, in our case, whether groups will or will not emerge. These features here include the magnitude of past flood events, the proximity to urban centers, previous interactions with authorities responsible for flood risk, and levels of deprivation. The form of participation in turn influences the expectations the public have of responsible authorities to mitigate flood risk, and their involvement in that process.

Our research therefore confirmed that both ‘contractual’ and ‘collaborative’ interpretations engagement can co-exist—in our case across flooded communities—but that different interpretations occur in different circumstances, supporting but extending previous theorizing. We believe the dilemmas we found regarding engagement remain acute, but in terms of practical lessons concerning governance, authorities need to be more aware that the form of participation encouraged can have a significant impact upon the process of interaction. If a particular situation is

wrongly interpreted, conflict is likely to occur, either because the public believe what they are being asked to provide is beyond the requirements of a citizen, or because the simplicity of blame delegation overlooks the complexity of the flood problem, meaning that underlying drivers of risk, such as awareness and vulnerability, are never fully addressed.

REFERENCES

- Adger, W.N., J. Barnett, K. Brown, N. Marshall, and K. O'Brien. 2013. Cultural dimensions of climate change impacts and adaptation. *Nature Climate Change* 3: 112–117.
- Buchecker, M., G. Salvini, G. Di Baldassarre, E. Semenzin, E. Maidl, and A. Marcomini. 2013. The role of risk perception in making flood risk management more effective. *Natural Hazards & Earth System Sciences* 13: 3013.
- Defra (Department for Environment, Food and Rural Affairs). 2004. Making space for water: Developing a new government strategy for flood and coastal erosion risk management. London: Defra.
- Denzin, N.K., and Y.S. Lincoln. 2000. *Handbook of qualitative research*, 2nd ed. Thousand Oaks, CA: Sage.
- Department for Environment, Food and Rural Affairs (Defra). 2010. Future funding for flood and coastal erosion risk management: Consultation on the future Capital Grant-In-Aid allocation process in England. London: Defra.
- Environment Agency. 2010. FDGiA allocations for 2010/11 to 2014/15. Open Board Meeting 9 February 2010. Bristol: EA.
- Gauthier, D. 1977. The social contract as ideology. *Philosophy & Public Affairs* 6: 130–164.
- Geaves, L.H. 2012. Emergence, interpretations and impacts of civic engagement in flood risk management in England and Wales. Unpublished M.Phil. thesis, University of Oxford.
- Giddens, A. 2013. *The third way: The renewal of social democracy*. New York: Wiley.
- Harker, R. 2011. Standard Note: Voluntary Sector Statistics. House of Commons Library. SN/SG/5428.
- Harries, T., and E.C. Penning-Rowsell. 2010. Victim pressure, institutional inertia and climate change adaptation: The case of flood risk. *Global Environmental Change* 21(1): 188–197.
- Hayek, F.A. 1945. The use of knowledge in society. *American Economic Review* 35: 519–530.
- Hobbes, T. 1699. *Leviathan, 1651*. Oxford: Oxford University Press.
- Johnson, C.L., and S.J. Priest. 2008. Flood risk management in England: A changing landscape of risk responsibility? *Water Resources Development* 24: 513–525.
- Kates, R.W. 1962. Hazard and choice perception in flood plain management. Research paper 78. University of Chicago, IL: Department of Geography.
- Kisby, B. 2010. The big society: Power to the people? *The Political Quarterly* 8: 484–491.
- Lane, S.N., N. Odoni, C. Landstroem, S.J. Whatmore, N. Ward, and S. Bradley. 2011. Doing flood risk science differently: An experiment in radical scientific method. *Transactions of the Institute of British Geographers* 36: 15–36.
- Lichterman, P. 2009. Social capacity and the styles of group life some inconvenient wellsprings of democracy. *American Behavioral Scientist* 52: 846–866.
- McNally, C. 2014. Partnership funding—Early indications of the impacts of Defra's change in approach to capital funding for flood and coastal erosion risk management projects. Paper, CIWEM Rivers and Coastal Group Annual Conference, 30 January 2014, London.
- Organski, A.F.K. 1968. *World politics*, 2nd ed. New York: Knopf.
- Ostrom, E. 1999. Coping with tragedies of the commons. *Annual Review of Political Science* 2: 493–535.
- Pahl-Wostl, C., and M. Hare. 2004. Processes of social learning in integrated resources management. *Journal of Community and Applied Social Psychology* 14: 193–206.
- Penning-Rowsell, E.C., D.J. Parker, and D.M. Harding. 1986. *Floods and drainage: British policies for hazard reduction, agricultural improvement and wetland conservation*. London: Allen and Unwin.
- Pitt, M. 2008. *Learning lessons from the 2007 floods*. London: The Pitt Review Cabinet Office.
- Powell, F., and M. Geoghegan. 2004. *The politics of community development: Reclaiming civil society or reinventing governance*. Dublin: A & A Farmer.
- Prugh, T., R. Constanza, and H. Daly. 2000. *The local politics of global sustainability*. Washington DC: Island Press.
- Rykiel, E.J. 1985. Towards a definition of ecological disturbance. *Australian Journal of Ecology* 10: 361–365.
- Sayers, P., G. Galloway, E.C. Penning-Rowsell, et al. 2014. Strategic flood management: Ten 'Golden Rules' to guide a sound approach. *The International Journal of River Basin Management* 1: 1–14.
- Tammen, R. 2000. *Power Transitions: Strategies for the 21st century*. New York: Chatham House.
- Weinstein, M. (2012). Textual Analysis Information. www.textualanlysis.info.
- Wilby, R.L., and R. Keenan. 2012. Adapting to flood risk under climate change. *Progress in Physical Geography*. doi:10.1177/0309133312438908.
- Young, Iris. 2000. *Inclusion and democracy*. Oxford: Oxford University Press.

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