Social justice and the future of flood insurance

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Catastrophic flooding events have become increasingly frequent in the UK and, with climate change, are likely to become even more frequent in the future. This *Viewpoint* argues that social justice demands an insurance regime based on principles of solidarity, which guarantees access to flood insurance for vulnerable households. If the UK flood insurance regime moves further towards a free market, it will be at the expense of fairness and social justice.

Key points

- The UK flood insurance regime is in a period of change, with the imminent expiry in 2013 of the 'Statement of Principles' between the Government and the Association of British Insurers (ABI).

- In considering what should replace these Principles, two contrasting models can be distinguished:
  - *individualist, risk-sensitive* insurance, provided through a market in which individuals' payments are proportional to their level of risk;
  - *solidaristic, risk-insensitive* insurance, in which those at lower risk contribute to the support of those at higher risk.

- The UK is currently moving towards an increasingly individualistic, market-based approach to flood insurance, in contrast to the more solidaristic approaches in most comparable countries.

- We distinguish three approaches to 'fairness' in the provision of flood insurance:
  1. 'pure actuarial fairness' – insurance costs to individuals should directly reflect their risk level;
  2. 'choice-sensitive fairness' – insurance costs to individuals should reflect *only* those risks that result from each individual's choices;
  3. 'fairness as social justice' – insurance in the provision of goods that are basic requirements of social justice should be provided independently of individuals' risks and choices.

- 'Pure actuarial fairness' does not provide a compelling approach to flood insurance. This *Viewpoint* defends the 'fairness as social justice' approach, but shows that both approaches two *and* three provide strong grounds for a more solidaristic flood insurance regime.

- The purely market-based alternative threatens to leave many thousands of properties uninsurable, leading to extensive social blight.

- There are a number of possible flood insurance models that would deliver fairer and more sustainable outcomes. There is, therefore, an overwhelming case for rejecting a free market in flood insurance after 2013.

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Introduction

Future policy on flood insurance has become a pressing issue. The frequency and intensity of flooding in the UK has increased and can be expected to increase further with climate change. The current agreement on insurance in the UK ends in June 2013 and Defra is currently in discussion with the insurance industry, flood action groups and other interested parties as to its replacement.

In contrast to the systems of flood insurance and compensation that operate in Europe and the United States, flood insurance in the UK is peculiar in having a purely market-based approach to insurance in which risk is reflected in the premiums paid and borne by individual households, albeit with a subsidy from low-risk to high-risk households. However, if left to the market, with the increasing ability of insurers to differentiate between households of different levels of risk, this cross-subsidisation is likely to fall. This will leave many low-income households effectively uninsurable, with the consequent threat of many neighbourhoods suffering from severe social blight.

Very little in recent policy discussions has addressed the question as to what principles of justice should underpin the provision of insurance in the UK. It is this question that we address in this *Viewpoint*. We will argue that on any plausible account of justice, the existing insurance regime is unjust, and a shift to a more risk-sensitive regime will make matters even more unjust. Equity, fairness and social justice require a more 'solidaristic' model of flood insurance for households in the UK that protects the socially vulnerable.

Climate change, flood and flood insurance: a growing problem

Catastrophic flooding events have become an increasingly frequent occurrence in the UK, particularly in England and Wales. The flooding in summer 2007 was severe and widespread, affecting many areas in England – particularly South Yorkshire, Hull, Gloucestershire, Worcestershire and the Thames Valley (Pitt, 2008). Pitt, in his opening remarks to the review of flooding in 2007, reports that the floods constituted the 'country's largest peacetime emergency since World War II' (Pitt, 2008, p. vii). The intense rainfall in Morpeth in 2008 led to flooding that seriously damaged around 1,000 properties (Parkin, 2010; Morpeth, 2011b, appendix 3). The 2009 Cumbrian floods centred on the town of Cockermouth were the most serious in many years, with the flooding of 1,800 properties and the evacuation of 200 homes in the town (Smith, 2010, p.2). While no particular flooding event can be attributed to climate change, there is evidence that fluvial (river-related) and pluvial (rainwater-related) flooding events are likely to become more common, as global warming leads to changes in weather patterns, and increases the frequency of extreme precipitation and other extreme weather events (IPCC, 2007; Pall et al., 2011). Catastrophic floods – once a relatively rare event in the UK – look set to become a more regular occurrence. The risk of flooding has become serious: 'In all, around 5.2 million properties in England, or one in six properties, are at risk of flooding. More than 5 million people live and work in 2.4 million properties that are at risk of flooding from rivers or the sea, one million of which are also at risk of surface water flooding. A further 2.8 million properties are susceptible to surface water flooding alone. ' (Environment Agency, 2009 p.3)

Policy responses to the increased frequency of extreme weather events can take a number of forms. The Government can seek to invest in flood-protection infrastructure and the renewal of urban drainage systems, while changes in agricultural drainage practices can lessen the run-off of water downstream. However, these may often be limited in the degree to which they can offer protection. In addition to these methods of 'hard' adaptation, 'softer' methods of adaptation, such as addressing insurance arrangements for flooding, will also be necessary. Assuming that measures of 'hard' adaptation have their limits, there is a pressing need to explore the options in terms of providing insurance-based models of 'soft' adaptation.

The question of insurance in the UK has become particularly pressing for a number of reasons. The general structure of the management of flood risk in the UK is distinctive by comparison with many other European countries. Whereas in many EU countries, as well as in the USA, the provision of insurance or relief against flood damage is provided by or is guaranteed by the government, 'the UK is unusual in having the majority of domestic and business flood damage borne through a competitive insurance market, albeit with a history of cross-subsidisation between policy holders'. (Defra 2011b, p. 2; see Box 1 for a comparison with other insurance regimes). The UK flood insurance regime has recently undergone a series of important modifications, especially with regard to the degree of cross-subsidisation between those at different levels of risk, and is about to enter a period of potentially fundamental change from 2013 onwards as the current agreement of principles between the Government and insurance industry to manage risk and cost comes to an end. The prospect will have particular implications for the poor and disadvantaged (Lindley et al., 2011).

Already a disproportately high number of low-income households are without insurance. The increase in premiums and excess payments will render insurance effectively unavailable to many more households. A shift towards an insurance regime that is increasingly sensitive to risk, together with an increasing number of properties at risk from flooding, brings real threats of blight to communities at risk. Many more low-income households will be unable to afford to insure the contents of their homes. Many properties will face the prospect of becoming uninsurable, raising the prospects of neighbourhoods in which houses are unsaleable and uninhabitable (ABI, 2008). As Houston *et al*., note:

> Increased premiums may make more sought-after areas the preserve of the rich; in other areas, such increases may lead to falls in house prices and subsequent filtering of lower income groups into these areas. The withdrawal of insurance altogether would be likely to blight areas of new development and cause problems for the resale of existing properties. (Houston *et al*., 2011 p.9)

Given the potential scale of the risks of flooding as the effects of extreme weather events increase with climate change, there is an urgency to current discussions about the future of flood insurance in the UK. The ABI has recently estimated that some 200,000 households may become uninsurable when the current agreement ends in June 2013 (ABI 2012). It is in this context that current discussions on insurance policy are taking place.

Box 1: Flood insurance regimes in Europe and the USA

Globally there is a variety of different insurance regimes for flooding (Consorcio de Compensación de Seguros, 2008; Botzen and van den Berg, 2008; Crichton, 2011b).

- **France**: there are constitutional guarantees of the principle of solidarity for natural disasters: 'The Nation shall proclaim the solidarity and equality of all the French people with respect to burdens resulting from national disasters.' (Preamble to the 1946 Constitution.) In practice, insurance is provided through a partnership between the state and the insurance industry. The insurance industry collects a compulsory premium for natural disasters that is standard in policies and which is charged regardless of the level of risk. The state acts as the re-insurer and hence guarantees payments as the insurer of last resort. Insurance payments are made in the event of a state announcement of a state of natural catastrophe. Similar solidarity-based models of insurance involving partnerships between the state and insurance industry operate in Belgium and Spain.

- **Netherlands**: flooding is typically excluded from insurance policies in the Netherlands. Under the Calamities Compensation Act (1998), the state is responsible for losses due to floods which are not covered by private insurance.

- **Iceland**: a compulsory insurance regime is operated for natural disasters including floods under a public insurance company, Iceland Catastrophic Insurance.

- **Germany**: major flooding is principally covered by public compensation packages. Private risk-differentiated insurance is available but there is very low take up of such insurance.

- **USA**: catastrophic flooding is typically excluded from private insurance policies for high-risk areas and is covered by a federal National Flood Insurance Program. The Program aims to make flood insurance available to those in areas of high flood risk – 'Special Flood Hazard Areas'. It offers insurance to those within communities that are part of the Program, where insurance is conditional on the communities adopting plans that reduce future flood risks.

The changing nature of flood insurance in the UK

The flood insurance regime in the UK, although with similarities to the regimes in Ireland and Portugal, is peculiar within the EU in having a purely market-based insurance scheme, which does not involve a central role of the state either through direct aid, public insurance or through acting re-insurance, so acting as the insurer of last resort. The flood insurance regime in the UK has recently begun to undergo a series of changes, and will change still more fundamentally in the years ahead.

From 1961 through to 1 January 2003, flood insurance in Britain was governed by a 'gentleman's agreement' that divided responsibilities between the state and the insurance industry. Under the terms of this agreement, it was understood that the state would provide flood defences and prevent development in flood hazard areas. The insurance industry, except in exceptional circumstances of unavoidable 'continual and regular flooding' (Huber, 2004, p.5), would provide flood insurance for all households and some small businesses regardless of their flood risks, such that an 'additional premium rate would not exceed 0.5 per cent on the sum insured' (Crichton, 2002, p.127). (Northern Ireland was not mentioned in the agreement, but it was 'deemed' to be included in custom and practice.)

Following the large insurance payouts for floods in the late 1990s this agreement began to break down. It was replaced on 1 January 2003 by a voluntary agreement between members of the Association of British Insurers (ABI) and Government, known as the 'Statement of Principles'. According to that agreement, ABI members would continue to offer insurance cover to existing customers where the probability of their properties being flooded in any single year is 1-in-75 or less, or where flood defences planned in the next five years will bring flood probability down to that level. Within those areas covered, premium charges and excess payments are allowed to reflect different levels of risk. The level of payment of individual premiums is not tightly correlated to risk, since existing insurance schemes involve cross-subsidisation from those at lower risk to those at higher risk. According to the ABI there are currently subsidies to 78 per cent of homes in areas of significant flood risk (ABI, 2011a). However, while cross-subsidisation exists, those at higher risk still face higher costs. The risk sensitivities raise particular difficulties for those on low incomes.

Low-income households are particularly likely to lack insurance. The Pitt review notes:

> Low-income households are least able to recover from the financial impact of flooding and are statistically the least likely to be insured. The lack of home contents insurance in low-income households is widespread. Of people in low and very low-income households, one-third of all UK households, 69 per cent are in social housing. Of this 29 per cent have no insurance at all and 50 per cent do not have home contents insurance as opposed to 1 in 5 of those on average income. (Pitt, 2008, 9.28)

The proportion of households in the rented sector that have contents insurance is particularly low (Blake and Jong, 2008). In the three years up to 2009, over 60 per cent of those in social rented and private rented properties lacked contents insurance, compared to less than 10 per cent of owner-occupiers. Approximately 78 per cent of those without contents insurance were in the rented sector (Poverty Site, 2011). The figures for those with contents insurance in low-income households and the rented sector are higher in Scotland than in the rest of the UK. The Scottish Household Survey of 2007 showed 60 per cent of households in the lowest income decile have contents insurance, but this still compared to the much higher rate of 96 per cent in the two highest-income deciles (Hayton *et al*., 2007, p.66). Fifty-six per cent of local authority tenants and 50 per cent of housing association or private tenants had contents insurance, compared to 98 per cent of owner-occupiers with a mortgage. However, even in Scotland the proportion of those with contents insurance has fallen since 2005. Existing schemes directed at the rented sector include low-cost 'insurance-with-rent' schemes with minimal or no excess charges and security conditions. The uptake of these schemes has been mixed (Hood et al., 2009). Increases in premiums that would result from a purely market-based regime which was fully risk-sensitive would make it still more difficult to include those at risk of flooding who are currently without contents insurance.

The absence of insurance makes recovery from floods difficult and affects ability to prepare for future flood events. A low-income household at great likelihood of flooding will have difficulty in accessing insurance, either through increased premiums and excesses or simply due to insurance refusal. Thus the *Morpeth Flood Action Group Insurance Survey* reports: average increases in buildings and content insurance premiums of 71 per cent for flooded households, against 9 per cent for non-flooded properties in the same postcode and a fall in premiums for properties generally; an average 59 per cent increase in premiums for contents insurance for flooded properties, as against 12 per cent for non-flooded properties in the same postcode and a fall in premiums for properties generally; and higher excess payments for flooded households, with some being over £10,000 (Morpeth Group, 2011b; compare the similar results for Lewes in Dlugolecki *et al*., 2009, ch. 7 p. 21).

The impacts of floods for low-income uninsured households are evident in qualitative research on flooding in the UK. Consider the experience of a tenant on low income recovering from the Hull floods reported in Box 2.

Box 2: Low-income access to insurance

> 'Helen, a council tenant, had no contents insurance and had to re-furnish her home on a very limited income (she was disabled and couldn't work). Having had this experience, Helen was determined to purchase insurance to protect her home in future. However, none of the companies she contacted would insure her. Even those whose cover was intact sometimes found the terms of their new policies very unfavourable, as Leanne described:
>
> "We went on the web looking for insurances and, like you say Isobel, other insurance companies don't particularly want to take you on and the premiums were that high it was unbelievable. So we stuck with the same insurance company and they took us back on and the premium only went up £50 and that wasn't a problem. But the excess has gone up £5,000 we have to pay on contents and £5,000 on buildings. So if the same thing happened again we've £10,000 to find before we start. And where do we pluck that from? Where do we get that from? We haven't got £10,000. Or do we save anything at all or do we literally just let the whole lot go and say it's all gone and claim what we can and just have everything lesser?"' (Whittle *et al.*, 2010, p. 111)'

From 2013 and beyond

The current agreement between the ABI and Government ends in 2013. It is very unlikely that it will be extended. Claims on insurance in high-risk areas have tripled in the last decade (Ballard, 2011). Moreover, new insurers who do not have a legacy of business in higher risk areas have a commercial advantage over those who do, thus creating market pressures within the insurance industry to move away from existing arrangements.

Defra is now in discussions with the ABI, the National Flood Forum and other parties over the regime that should replace the existing agreement when it ends in 2013.

Defra's final report on flood insurance, *Flooding and insurance: a roadmap to 2013 and beyond*, outlined a number of principles to govern future flood insurance. The principles were:

1. Insurance cover for flooding should be widely available.
2. Flood insurance premiums and excesses should reflect the risk of flood damage to the property insured, taking into account any resistance or resilience measures.
3. The provision of flood insurance should be equitable.
4. The model should not distort competition between insurance firms.
5. Any new model should be practical and deliverable.
6. Any new model should encourage the take up of flood insurance, especially by low-income households.
7. Where economically viable, affordable and technically possible, investment in flood risk management activity, including resilience and other measures to reduce flood risk, should be encouraged. This includes, but is not limited to, direct Government investment.
8. Any new model should be sustainable in the long run, affordable to the public purse and offer value for money to the taxpayer. (Defra, 2011b, p.5)

One question that might be raised about this list of principles is whether they are consistent with each other. For example, the first principle encourages wide availability of flood insurance, while the sixth principle chimes with this goal by pointing towards the significance of increasing uptake of insurance in low-income households, but one may wonder whether this will not generate a deep tension with the potentially-competing goals of tying premiums closely to risk (second principle) and minimizing the costs to the public purse (eighth principle). To take a further example, we need to try to discover whether the second and third principles are mutually consistent. Can an insurance regime really guarantee access to insurance on *equitable* terms, whilst nevertheless being essentially risk-sensitive?

Clearly, an answer to that question in part requires an answer to a question that is not addressed in the Defra report: what is it for the provision of insurance to be fair or 'equitable'? Thinking about the relevant senses of fairness or equity in the arrangement of flood insurance is not a straightforward task, as it involves having a clear picture of the function and significance of insurance, and of the special role that flood insurance might play in the lives of people who can (or cannot) access it. The aim of this *Viewpoint* is to provide a fuller sense of what the options might be in thinking of what counts as fair or 'equitable', and, further, to look at the sort of flood insurance regime that we should endorse if we take fairness or equity seriously.

Before looking at rival accounts of what might count as 'equitable' provision, we will first discuss the competing models of insurance provision, to give a clearer sense of the possible options as the UK comes to renew its regime of flood insurance provision in 2013 and beyond.

Two basic approaches to insurance provision

Insurance provision can take many different forms. However, it is useful to distinguish two broad idealised types of insurance provision (O'Neill, 2006). By thinking through the attractions and problems of these two general approaches, we can get a clearer sense both of the issues of equity at stake here, and of the possible options that the UK might wish to adopt.

a. *Individual, risk-sensitive insurance*
These 'mutual' insurance markets operate through the pooling of risk, with payment into the pool being in accordance with the best estimate of the level of risk brought to the pool. Typically, such schemes are private, market-based and contractual. The level of cover offered is often related to the amount of insurance purchased. Such schemes are often (but not always) voluntary; individuals therefore have a level of discretion over the amount of cover that they wish to purchase.

b. *Solidaristic, risk-insensitive insurance*
In this kind of insurance model, risks are pooled, and payment into the 'risk pool' is in accordance with some agreed scheme (for example, ability to pay, value of the property insured or perhaps even strict equality of contribution), but is to some degree independent of the level of known risk brought to the pool. Thus, the level of insurance cover is independent of the level of payment, and is generally associated with level of individual need. Such schemes often tend to be state run, are typically comprehensive (i.e., they cover everybody) and compulsory. Given this, individuals tend not to have discretion over the level of cover that they will enjoy. A typical example of such a scheme is the operation of health insurance in the UK (as in Canada and most EU countries), with the National Health Service supplying a (roughly) standard level of cover to all citizens, funded through general taxation.

There are clearly a variety of different kinds of insurance provision between these idealised types. The changing nature of the flood insurance scheme in the UK since 1961 involves an increasing risk-differentiation of premium charges and excess payments, from the relatively low risk-differentiation of the 'Gentleman's Agreement' (1961 to 2003), which was closer to a solidaristic risk-insensitive scheme, to the more risk-differentiated schemes of the 'Statement of Principles' (early 2000s), albeit with some cross-subsidisation in practice. The increasing availability of data that allows insurers to discriminate more finely between areas of flood risk is leading to increased risk-differentiation and declining cross-subsidisation. The end of the Statement of Principles in 2013 raises basic questions about whether and how flood insurance should move in a more individualised or a more solidaristic direction, and whether the level of risk-differentiation should increase (thus completing the move from a more solidaristic schemes to individualised schemes) or decrease (which would represent a return to conditions similar to those that obtained in the UK for much of the last century). More solidaristic schemes are more typical of insurance regimes in Europe and the United States (see Box 1).

The shift from the more solidaristic to the more individualist risk-differentiated form of insurance has seen increasingly high premiums for households at risk, and growing difficulties for some households in obtaining insurance at all (Crichton, 2007, p. v).

Despite these apparent socially inequitable consequences of the shift to a risk-differentiated individualist model of insurance, the literature on flood insurance is dominated by economic arguments for market-based individualist insurance policies. These economic arguments typically appeal to claims about the efficiency of individualist, risk-differentiated insurance.

However, the claim is often made that differentiating premiums by risk is not only more efficient, but is also fairer or, in the terms of the 2011 Defra report, 'more equitable'. Consider for example the following comment on the decline of the 'Gentleman's Agreement' in the UK:

> The reformed Gentleman's Agreement differentiates premiums, charging houses in exposed areas more, and makes in that way the 'burden sharing' mechanism visible, debateable and exposed to criticism. Increasing efficiency and fairness are the result of the cost of unveiling the subsidising. (Huber, 2004, p.17)

In this *Viewpoint* we argue to the contrary. Our suggestion is that equity, fairness and social justice do require a more solidaristic model of flood insurance for households in the UK. In doing so, we will not defend any particular solidaristic insurance scheme. As will be evident from the variety of solidaristic insurance regimes for flood that are in operation elsewhere (Box 1), there may be a number of alternative institutional arrangements which could all provide flooding insurance on suitably solidaristic terms. These range from the private-public partnerships of the kind found in France, Spain and Belgium, through to public insurance found in the USA and Iceland. Nevertheless, our aim is to develop a principled argument for the necessity of some such scheme as a requirement of social justice. It will now be useful to return to the different understandings of equity or fairness that may be relevant when we think about the justifiability of different insurance regimes.

Fairness and equity in insurance provision

There are at least three different principles of fairness or 'equity' that might govern an equitable insurance provision. They move from the narrowest standard to the more expansive. The plausibility of Defra's set of suggested principles turns very much on giving a further specification of the concept of 'equitable' on which it relies. As we shall see, Defra's principles may be able to be read as mutually consistent with one another only by virtue of relying upon an independently implausible account of what counts as fairness or 'equity'. On a more plausible understanding of what counts as 'equity', we may have to make much tougher choices between delivering an insurance regime that is fair and equitable and delivering an insurance regime that differentiates sharply between individuals on the basis of flood risk.

Let us first, though, set out the content of these three senses of 'fair and equitable', starting from the narrowest conception and moving on to the more expansive.

1. *Pure actuarial fairness*
The idea here is that one treats some individual fairly with regard to making them bear the costs of their own risks when you align the costs that they face with their associated level of risk, as when 'an insurance company has the responsibility to treat all its policy-holders fairly by establishing premiums at a level consistent with the risk represented by each individual policy holder' (O'Neill, 1997, p.1088).

The grounds in justice offered for pure actuarial fairness is that it is unfair to ask those with lower risks to subsidise the risky behaviour of those with higher risk. For example, one might think that it is not fair that safe drivers should subsidise unsafe drivers. However, this pure form of actuarial fairness has clear and deep problems when it is applied to various other practical problems. One problem is that it forces those who are unfortunate *through no fault of their own* to bear the full costs of their misfortune. For example, it does not seem fair that a person who becomes seriously ill with Huntington's disease as a result of their bad luck in the genetic lottery should bear the full costs of facing that illness, even if it would be 'actuarially fair' to make them fully bear the costs of their own treatment. Similarly, for example, we may plausibly think that people should not be discriminated against on the basis of their class background, gender or race, even when those features carry with them an actuarially significant increase in risk with regard to some potential outcome.

In cases where a purely 'actuarial' account of fairness seems too narrow, a more plausible account of the ideas of fairness and equity might instead focus on the significance of individual choices. This leads us to consider what might be described as 'choice-sensitive fairness'.

2. *Choice-sensitive fairness*
The idea here is that insurance premiums against some risk should be set at a level that reflect those risks that are the result of each individual's choices, but should not be sensitive to differences in risk that are no choice or fault of the individual in question.

This elaboration of the idea of 'equity' or fairness may seem more plausible in many cases. It would still recommend, for example, that those who go on risky winter sports holidays should bear the costs of their own travel insurance, but it would not recommend the rather harsh outcome that those who develop Huntington's disease because of their bad luck with regard to their genetic risk should be made to bear the costs of their condition.

However, this principle appears to have outcomes that are unjustifiable in many cases. There are certain 'social goods' that an individual requires to lead a minimally decent life, or to engage as a citizen in public life, and it may seem unjustifiable to deprive a person of those goods, even if their potential loss is the consequence of that person's choices. We may take the view that it is wrong to deprive somebody of medical care in the case of a serious motorcycle accident, even if the accident was a result of their own choice. We may also think that the broader demands of social justice require that people are guaranteed certain goods, rights and protections that allow them to live in relations of equality and respect with one another, or to function as normal citizens within their societies.

This brings us to a broader and more expansive account of fairness and equity, which links those ideas to the broader demands of social justice. Asking about the fairness or equity of arrangements for, say, flood insurance, is asking a question that demands the examination of how that particular form of insurance plays a role in people's lives, and how that role may be related to general concerns of social justice.

We might succinctly state this third conception of fairness or equity as follows.

3. *Fairness as social justice*
Insurance should be provided to govern the provision of at least some class of basic goods independently of the risks and choices of individuals, where the provision of those goods is required by basic entitlements of citizenship or basic requirements of social justice.

The question of which of these three accounts of fairness should be adopted will determine what will be taken to count as an *equitable* provision of insurance. In this *Viewpoint* we defend *fairness as social justice* for flood insurance. However, we also argue that *either* principles 2 or 3 above would require insurance provision that is less purely risk-sensitive than would be offered on a purely individualistic, risk-sensitive model.

The case for individualist, risk-sensitive flood insurance

Why might one take the view that systems of insurance that differentiate according to individual risk are both more efficient and fairer than solidaristic systems?

(a) *Efficiency*
The central arguments for the *efficiency* of a market-based risk-sensitive insurance regime are 'moral hazard' arguments. By making people bear the costs of their own choices, the differentiation of premiums by relative levels of risk encourages agents to make choices that lower their levels of risk. It encourages individual householders to make their properties more flood-resilient and hence lower the risk of flood damage. At the same time it will discourage property developers from building non-resilient properties in high flood-risk areas, since those properties would either be uninsurable or demand such high levels of insurance that they would be difficult to sell. In contrast, solidaristic systems carry a moral hazard. Individuals insured under solidaristic systems will not be given either the signals or incentives to behave in ways that lower their own risks and vulnerabilities; as a result, neither will builders and property developers who sell properties to those individuals.

These are arguments for the claim that a market-based regime in which individuals bear the full costs of their risk will, more efficiently, produce better consequences in creating a flood-resilient property stock. We will respond to them below. However, arguments that stress the greater *efficiency* of such a regime do not tell us anything about the equity or fairness of such arrangements. Moreover, the very mechanisms that ensure the effectiveness of a market-based insurance regime in delivering flood-resilient outcomes – that is, the use of price signals as incentives – may well be thought to lead directly to conspicuously unjust outcomes. For example, those on low incomes may be made effectively uninsurable. The question then arises of why we should think that market-based insurance could also be considered fairer?

(b) *Fairness and equity*
One argument for the fairness of individualist risk-sensitive regimes appeals to the pure actuarial concept of fairness we outlined above: the argument is that it is unfair that one part of the population with a low risk should subsidise another with high risks. However, this 'pure actuarial' account of fairness lacks any real plausibility, and conflicts with deeply-entrenched beliefs and considered judgements about fairness and equity. We do not in general believe that wealth transfers to the more vulnerable are 'unfair'; indeed, such transfers are regularly seen as central to the requirements of social justice, as we see for example through the operation of the National Health Service, which can be viewed as an institutional scheme for protecting the vulnerable. Indeed, many of these transfers from the fortunate to the unfortunate – to the sick, the old, the disabled – look to be requirements of justice rather than somehow inconsistent with it. The concept of 'pure actuarial fairness' is thus not particularly compelling. It requires those who are unfortunate, through no choice of their own, to bear the full costs of their misfortune. This strikes us as a model case not of fairness, but of *unfairness*.

The more plausible starting point for an argument for the fairness of a fully risk-sensitive insurance scheme is the choice-sensitive principle of fairness, in which insurance costs should be sensitive to risks that are the results of individuals' choices – but not those which are not the result of choices. It is not risk as such that should not be subsidised, but the choice to take risks. On this view, people should bear the consequences of their own choices. Accordingly, the claim is that principles of justice should be choice sensitive. If people choose to live in areas of high flooding, then they ought to bear the costs of the risks they incur in doing so. As one respondent put it in a BBC forum on flood insurance following the Cumbrian floods: 'Simple answer. Don't buy property in a flood risk area!' (BBC 2009). Correspondingly, it is unfair to expect others to subsidise those costs.

The appeal to choice-sensitivity corresponds to one current version of egalitarianism in recent political theory, that of the luck-egalitarian. For the luck-egalitarian, while unequal distributions of 'goods' that is the consequence of circumstances for which the individual is not responsible are unjust, inequalities that are the result of welfare losses consequent on voluntary choices, for which individuals are responsible, are not unjust (Arneson, 1989, 1990, 2011; Cohen, 1989; Dworkin, 1981, 2000; Rakowski, 1991). Inequalities are unjust if they are the outcome of 'brute luck' – that is of unchosen natural and social circumstances that are not the responsibility of the affected agents. However, inequalities are not unjust if they are the consequence of 'option luck' – risks that result from choices for which the affected agents are responsible (Dworkin, 1981, p. 293).

If one thinks that the losses incurred by those affected by flooding are the outcomes of the choices they make – be this about the location of their homes, their decisions to add flood defences or even their choices in decorating and furnishing their homes – there is no injustice in requiring them to bear the premium costs of insuring the additional risks associated with those choices. Nor is it unjust to expect them to bear the full costs of damage should they choose not to take out insurance. The voluntary, risk-differentiated premiums of individual insurance are consistent with the choice-sensitivity of justice. Solidaristic systems, in contrast, are unjust, since they require the prudent to bear the costs of the choices made by the imprudent. It would be unfair to expect prudent households to bear the costs of the choices of careless households.

A stark formulation of the luck-egalitarian perspective on natural disasters is that by Eric Rakowski. The choice to live in a place that is prone to natural disasters is a matter of 'option luck':

> If a citizen of a large and geographically diverse nation like the United States builds his house in a flood plain, or near the San Andreas fault, or in the heart of tornado country, then the risk of flood, earthquake, or crushing winds is one he chooses to bear, since those risks could be all but eliminated by living elsewhere. (Rakowski, 1991, p. 79)

Rakowski allows that losses that are the result of risks taken in order to 'to live a moderately satisfying life' can be taken to be 'instances of bad brute luck'. However, even this brute luck is transformed into option luck by the existence of insurance, and the familiar arguments for private rather than state insurance are evoked:

> With respect to brute luck below the baseline amount, what equality of opportunity establishes is nothing more than a universal insurance scheme. But if society is sufficiently advanced economically to make private insurance available, the state need not administer a single centralized insurance program. Indeed, leaving the provision of insurance to a competitive market would almost surely lead to more efficient coverage and greater consumer satisfaction. Thus, so long as no one is denied the opportunity to purchase insurance against bad brute luck at or below the amount justice initially requires, equality of fortune applauds the privatization of insurance… (Rakowski, 1991 p. 79)

Given the provision of private insurance, the public community has no duty in justice to compensate those who suffer loss through natural disaster. In particular, it has no duty of justice to compensate the uninsured. Their losses are the result of their own choices for which they are responsible: they are a matter of 'option luck' rather then 'brute luck'.

Responding to the fairness arguments for individualist, risk-sensitive flood insurance

There are two responses that might be made to the line of argument for the superior fairness of risk-sensitive flood insurance. The first is to deny that principles of public policy should always be choice-sensitive in the way such luck egalitarianism might suggest. That is, it is to argue in favour of the third principle of equity (*fairness as social justice*) instead of the second principle (*fairness as choice-sensitivity*). The second strategy would be to question the claim that the losses incurred are really the outcome of pure option luck. If such losses cannot be treated as the outcome of deliberate choices for which those who suffer the losses bear responsibility, then there would be reason to reject individualist, choice-sensitive flood insurance, even on the second principle of equity. We will examine both strategies in turn.

a. *Should public policy always be choice sensitive? The case for 'fairness as social justice'.*
Should public policy always be choice sensitive in the ways in which this luck-egalitarian line of thought might suggest? There are reasons that it should not. There are domains in which choice-sensitivity will lead to ethically objectionable outcomes. It will lead to the abandonment of those in dire need (Anderson, 1999, pp. 295–300; Fleurbaey, 1995). For example, the health service is normally offered to all on the basis of need. As Samuel Scheffler puts it:

> 'The fact that a person's urgent medical needs can be traced to his own negligence or foolishness or high-risk behaviour is not normally seen as making it legitimate to deny him the care he needs. Still less do people automatically forfeit any claim to assistance if it turns out that their urgent needs are the result of prudent or well-considered choices that simply turned out badly.' (Scheffler, 2003, pp.18–19)

Why should health needs have this status regardless of the choices made? One answer that is open to the luck-egalitarian is to claim that, while we do not have duties of justice to respond to the health needs of others where they are the result of their own choices, we do have other duties of solidarity or compassion to so respond, and that in cases of extreme hardship these over-ride strict duties of justice (Segall, 2007; Segall 2009, ch. 4).

Another response is to reject the claim that justice requires the strong forms of choice sensitivity that the luck egalitarian assumes (Anderson, 1999; Scheffler, 2003, 2005; Daniels, 2003; Freeman, 2007, ch. 4; Fleurbaey, 2001). There are basic social goods whose provision is required as part of the basic entitlements of citizenship or social justice. There are basic capabilities that must be met for a person to function at all in democratic society, and we have duties of justice to meet those needs. As Norman Daniels puts it: 'Our health needs, however they arise, interfere with our ability to function as free and equal citizens… To keep people functioning as equal citizens, democratic egalitarians must meet their needs however they have arisen, since capabilities can be undermined through both bad brute and bad option luck.' (Daniels, 2008, p.77). These arguments turn on the importance of health for the opportunities to realise a variety of other social goods in a democratic society, such as education, work, and social relations. Where the provision of a certain good, whether that is healthcare or other forms of social protection, can be seen as a 'gateway social good' (O'Neill, 2006) protecting one's access to other essential elements of a worthwhile life, then there are weighty reasons to make sure that all citizens have secure access to that good.

Similar points apply to the social and housing needs disrupted by flooding. Many of the 'goods' destroyed in catastrophic events such as flooding are preconditions for a variety of other capabilities: the loss of a secure home, the health effects, the dislocation of local communities and disruption of education and work are all consequences of such events (Lindley *et al.*, 2011). They have a disproportionate impact on the most vulnerable, and reinforce existing disadvantages.

> 'In floods, the more vulnerable groups such as the poor, the old, children, the disabled, and women suffer the greatest impacts, and these can be long-lasting. Intangible 'human' impacts, e.g. the loss of cherished family memorabilia by the elderly, can be much more costly to society in the longer term than tangible damage. This can result in the public and politicians underestimating the true impact of flooding in terms of not only the damage caused, but the long term mental distress and breakdown in social cohesion. (Dlugolecki, A. *et al*,. 2009, p.18)

In this context, flood insurance can itself be seen as a 'gateway social good' – it protects access to a broad variety of other ongoing goods and functionings. Without it, individuals are exposed to a catastrophic economic risk, thereby undermining their economic security and their ability to plan for the future. When individuals are protected against the prospect of massive economic shocks, and have reasonable expectations about their future economic state, this allows them to engage in certain kinds of long-term agency and planning which are simply impossible in the absence of such protections (Wolff and de-Shalit, 2007, ch. 3). This, after all, is the essential social role of insurance. To be uninsured in the face of flood risk is to be in a precarious, agency-sapping and desperate situation. Moreover, this situation is (a) worse for those who otherwise have fewer resources, who tend to be more vulnerable (Lindley et al., 2011) and (b) given uneven levels of insurance coverage, it is also more likely to be faced by individuals who otherwise have fewer resources. Like damage to health, catastrophic flooding events can lead to the loss of basic goods and security that are a condition of other functionings. Correspondingly insurance should be provided on the basis of a conception of fairness as overall social justice outlined earlier: insurance should ensure the security of at least a class of basic goods (or 'gateway goods') required by social justice independently of the risks and choices of individuals.

b. *How much choice? Why even those who endorse equity-as-choice-sensitivity should reject choice-sensitive flood insurance*

We have argued that insurance policy for catastrophic events like flooding should not be choice-sensitive in the ways that many justifications of mutualistic risk-sensitive insurance assume. However, even if insurance schemes should be choice sensitive, there is still an additional question: how far are losses due to flooding the outcomes of voluntary choices for which agents are responsible? A choice is voluntary only if it can be reasonably foreseen and the agents have real and acceptable alternatives to it. Neither condition is present for many victims of flooding.

The losses incurred by many flooding events cannot be understood to be the result of deliberate choices since they could often not have been reasonably foreseen by those affected. Individuals cannot reasonably be expected to know all the flood risks that currently exist, or which may develop. Levels of flood risk are not static and well known; they are evolving and developing in the light of climate change. They can be exacerbated by failures by public authorities to maintain watercourses and clean drains. Areas of flood risk change, and households previously not at risk, can find themselves newly at risk as weather patterns change or if there is new building development upstream. As Environment Agency flooding maps are updated, so also is the number of properties held to be at risk levels that render them uninsurable. Consider for example the following report from *The Sunday Times* in 2008:

> The number of properties blacklisted by insurers is set to double to 1m as the government releases its first maps of urban areas with inadequate drainage. At present, half a million homeowners live in areas classified as 'high risk' by the Environment Agency (EA) and are penalised with a supplement of up to 30% to their premiums and excesses of as much as £30,000. (Ali Hussain, 'Flood insurance blacklist swells', *The Sunday Times*, January 27, 2008, News, p. 11)

Changes in the maps identifying areas threatened by pluvial (rainwater-related) flooding have been particularly marked in recent years. There are now some 3.8 million properties reportedly at risk of pluvial flooding in England alone (Environment Agency, 2009; Houston *et al*., 2011).

Even where properties are new, individuals cannot be reasonably expected to know all the flood risks where the planning system has not indicated that such risks exist. Households should be able to rely on the fact that if planning permission has been given for a new building, then it is reasonable to assume that it is not at significant flood risk; but the planning system often fails to deliver this guarantee. Householders also have access to significantly different levels of information about flood risk, depending on the nature of their tenure. This is particularly significant in the rented sector where the proportion of households with insurance is already low. While buying a house usually involves flood risk checks to gain insurance in order to obtain a mortgage, for private or social renters there is no similar process when they choose where to rent, even where such a choice exists.

Moreover, the choices to live in a particular place are often not voluntary since low-income families may not have reasonable and acceptable alternatives. Many low-income households will simply not be able to afford to move elsewhere. Low-income households living in social housing often have no alternative housing available to them. As we have noted above, the point is granted by many luck-egalitarians. Rakowski, for example, allows that losses from risks in housing that are required in order to live a minimally decent life can be understood to be instances of brute luck. However, he suggests that the existence of private insurance allows agents to convert brute luck into option luck. If they stay uninsured then this is a result of a voluntary choice and they should bear the costs. The argument assumes, however, that agents are able to exercise that choice. Individualist insurance schemes that are risk sensitive may confront individuals with insurance premiums that they are unable to afford. As Elizabeth Anderson notes, a person on a low income who puts the immediate needs of family above insurance against risk acts prudently on the budget they have. It would be wrong to make them bear the full costs of their situation, given that they acted rationally given the options faced (Anderson, 1999, 198). Moreover, given the high excess charges involved in individualist insurance schemes in high-risk areas, low-income families can find themselves, through no fault of their own, facing onerous losses which would simply not be covered by their insurers.

The existing flood insurance regime in the UK is already marked by a degree of risk-sensitivity that means that many low-income households, particularly in England and Wales, are unable to take up insurance. This is despite the existence of cross-subsidisation from low- to high-risk properties. A shift to a market-based system of insurance for flooding that requires individuals to bear insurance costs that fully reflect their risks will be likely to worsen that situation. It will lead to increases in both premiums and excess payments that effectively leave many low-income households at risk of flooding uninsurable. Many flood-threatened areas will consequently be blighted. Given the scale of the likely future flood threat in the UK, these areas are likely to be widespread, especially in England. We have argued that only if one assumes an implausibly narrow 'actuarial' principle of fairness could this possibly be seen as an equitable outcome. On any plausible theory of justice, choice-sensitive or not, the existing insurance regime is unjust, and a shift to a more risk-sensitive regime will make matters even more unjust. There are very strong arguments in justice for a shift to a more solidaristic insurance scheme, as such a scheme would allow a person's contribution to insurance to reflect their ability to pay and the value of their goods insured, rather than simply their level of risk.

Responding to efficiency and incentive-based arguments for individualist, risk-sensitive flood insurance

We have made the case for more solidaristic insurance, but acknowledge that such an approach needs to respond to lines of argument grounded in considerations of efficiency and the importance of avoiding 'moral hazard', where individuals lack incentives to reduce their risks. The arguments run that solidaristic schemes provide neither the signals nor incentives for individuals to make their homes more flood resilient and for property developers to build homes that are at lower risk of flooding. It has been argued that some versions of solidaristic models such as the US insurance model actually give perverse incentives that promote building in flood plains (Crichton, 2011b). These are important arguments. They are not, however, decisive objections to solidaristic flood insurance as such; they point to important regulatory implications that must be addressed alongside the implementation of solidaristic insurance.

An initial point that needs to be made is that it is not only solidaristic insurance schemes that are open to moral hazard objections. A market-based risk-sensitive insurance regime for flood brings its own moral hazards. By shifting the costs of risks onto individual householders, it removes incentives for collective action to address flood hazards, be this at the community or government level. In particular, it weakens some of the incentives for government action to provide flood defences that have been a feature of previous agreements, and which are required under solidaristic schemes in many parts of Europe. There is a collective moral hazard that individualistic risk-sensitive regimes will shift the burden of adaptation onto those most at risk of flooding, as opposed to maintaining public provision of adequate flood defence. The potential for a collective moral hazard is apparent in current plans for flood management in England. While the Environment Agency projected that its flood risk management budget would need to increase by 9 per cent between 2012 and 2015 to maintain adequate flood defences, its budget for flood risk management is projected to fall by 10 per cent during this period (Public Accounts Committee, 2012, 1.2).

What does need to be acknowledged in response to the moral hazard arguments against solidaristic schemes is that such schemes do carry specific regulatory implications. They require an alternative set of incentives to individuals to make their homes more resilient – for example through subsidies on flood resilient measures, particularly for those on lower incomes. They require stronger planning regulations to control building of new properties at flood risk, and stronger building regulations governing flood resilience in new build and repair to flood-damaged buildings. There are however very strong grounds for such a tighter regulatory framework. The regulatory differences governing flood risk between England and Scotland are particularly revealing. As David Crichton (2011a) has recently noted, there are major differences in planning and regulation within the UK between England and Wales on the one hand, and Scotland on the other, which have made a large difference in the degree of flood risks households face. In England roughly 10 per cent of new build is in flood plain. In contrast, in Scotland there has been no new build in flood plain since 1995. The extent of new build in flood plains in England, in particular, (see Table 1) and the absence of regulations on flood resilience in building raise serious problems.

The contrast is in part due to differences in population density, which put pressure on building, in particular in the south-east. However, it is also in part due to different planning and building regulations. Where English planning regulations permit building in flood plains where there is no alternative, Scottish Planning Policy does not permit building in areas in which 'the flood risk exceeds the 200 year return period', i.e. where in any year there is a greater than 0.5 per cent probability of flooding. Scotland has stronger regulations governing the capacity of sewage and drainage systems for new building. It also has stronger minimum standards for flood defences. Building regulations ensuring flood resilience in the housing stock are more developed. Scottish planners, through Flood Liaison and Advice Groups, are engaged with local communities, the emergency services, insurers and other interested parties in drawing up flood plans. The differences in regulatory regimes between England and Scotland are reflected in the number of households that are at risk of flooding, and the resilience of communities in responding to those risks. Despite higher rainfall north of the border, communities in Scotland face substantially lower flood risks. While 5 per cent of Scottish households are at a 0.5 per cent flood risk in Scotland, 23 per cent of households in the England face a higher 1.0 per cent risk (Crichton, 2011a, p. 558).

Solidaristic insurance models do carry implications for stronger regulation. However, there is a powerful case for a stronger regulatory framework governing building and planning, to protect communities against the risk of flooding throughout the UK. Such an improvement in regulation, if it brought all of UK planning up to Scottish standards, would remove many worries about solidaristic insurance creating perverse incentives to build in vulnerable areas.

Finally moral hazard arguments against solidaristic schemes have to be placed in the context of wider arguments about justice, which we have outlined in this *Viewpoint*. Even if a shift to a highly risk-sensitive market regime in insurance did provide signals and incentives that lower overall flood risk in the long term, it would be unjust to achieve that end by placing the burdens on those of low income who face the risks of floods unprotected and with least ability to manage those risks. Part of the argument about the nature of the insurance regime concerns the degree to which societies collectively should protect those who are vulnerable to the outcomes of actions for which there is a wider, uneven, but shared, responsibility. To the degree that the increased frequency and intensity of flooding is the outcome of climate change, it is the outcome of actions for which those who are most vulnerable often carry the least responsibility. There is a particular double injustice if those on low incomes who are least responsible for greenhouse gas emissions are faced with the greatest burdens of policy responses to the problems they create (Thumim *et al*., 2011, Lindley *et al*., 2011). Public policy regarding insurance should reflect the wider joint responsibilities for the problems emissions cause, including flooding.

Fairness, social solidarity and the future of flood insurance

In this *Viewpoint*, we have argued that on any plausible theory of justice, be it choice-sensitive or not, the existing insurance regime is unjust, and a shift to a more risk-sensitive regime will make matters still more unjust. There is a strong case in justice for a more solidaristic system for flood insurance. However, we have already noted that the current trend in flood insurance in the UK is moving in precisely the opposite direction. If there is no new policy to replace the current Statement of Principles, then with the increasing ability of insurers to differentiate the flood risk of different properties there will be a shift towards decreasing cross-subsidisation, and thus towards pure individualised, risk-differentiated schemes, in which payments and excess will fully reflect predicted risks. One consequence will be that a large proportion of the housing stock in England and Wales will become uninsurable, and this in turn is likely to generate severe social blight.

It is in this context that discussions are taking place between Defra and representatives of the insurance industry, the National Flood Forum and other parties. The current outcome of these discussions appears in the Defra report *Flooding and insurance: a roadmap to 2013 and beyond* (Defra 2011b). While this report does acknowledge the threat of social blight and does consider a risk pool involving some cross-subsidisation as one of the policy options, the report tends towards an increasingly individualised, risk-sensitive regime. Given the wide diversity of regimes that exist for flood insurance globally (Box 1) the report considers only a narrow range of free-market insurance regimes as options for policy after 2013. While the Defra report notes that the UK is peculiar in having a purely market-based regime for residential insurance, this market-based approach is left largely unquestioned and the report simply assumes the necessity of a market-based approach, with repeated emphasis on the importance of removing 'market distortions'. As we noted earlier, fairness and equity in insurance provision are mentioned among the principles governing any new regime. However, the concepts are not defined in Defra's report and, as they are used in the discussion of different options, the report appears to operate without further

Table 1: Land Use Change – percentage of new dwellings built within areas of high flood risk, by region, 2000 to 2010

Percentage

Year	*Government Office Regions: North East*	*North West*	*Yorkshire and the Humber*	*East Midlands*	*West Midlands*	*East of England*	*London*	*South East*	*South West*	***England***
2000	1	5	11	9	2	6	22	7	8	**8**
2001	2	5	11	10	3	5	18	7	9	**8**
2002	2	4	11	12	3	7	20	6	11	**9**
2003	2	5	12	11	2	7	28	7	8	**9**
2004	1	3	9	11	4	7	27	6	7	**9**
2005	1	5	12	9	3	8	15	6	8	**8**
2006	1	4	15	12	4	9	19	8	7	**9**
2007	2	6	14	12	5	6	16	5	5	**8**
2008	3	2	14	10	4	5	23	5	7	**9**
2009	1	3	10	10	3	10	21	9	8	**11**
2010	2	8	11	7	4	4	21	5	7	**9**

Source: Land Use Change Statistics, DCLG 2011. www.communities.gov.uk/planningandbuilding/planningbuilding/planningstatistics/livetables/landusechange/ (accessed 10.2.12.)

argument with a narrow actuarial conception of equity. Thus, for example, it recognises that a policy of doing nothing will result in 'the unwinding of the cross-subsidy', but claims that this 'therefore *removes significant distributional and equity impacts*' (Defra 2011b, p. 6). A focus of the report, in particular of its second working group, is on a version of the moral hazard argument for individualised insurance. The report argues that incentives need to be created to ensure households reduce their own risks to flooding, even if this leads to higher premiums for those most at risk:

> On the cross-subsidisation of insurance for properties, it was recognised that if flood risk was better reflected, this could lead to the cost of policy terms increasing as well as decreasing. The Group agreed that this was a more preferable situation to that at present, even if it did lead to increased premiums for some, as it would provide an incentive for all individuals to manage their own flood risk. (Defra, 2011b, p.12)

At the same time the report takes for granted the current UK Government's agenda of reducing 'regulatory burden', and rules out a stronger building and planning regulatory regime to reduce the risk of flooding (Defra, 2011b, pp. 23–27). Together with the wider relaxation in the planning regime following the Localism Act of 2011, the corresponding burden for reducing new build in the flood plain will fall on an insurance regime that more fully reflects risks. For the reasons we have outlined, this will have consequences for those who currently find themselves at flood risk that could be defended on no plausible theory of justice.

The ministerial written statement on the 2011 Defra report appears actively to endorse the trend away from subsidisation and towards an individualised risk-sensitive insurance regime (Benyon, 2011). However, in the wider discussions of flood insurance in the UK, there is acknowledgement within flood action groups, and even in the insurance industry itself, that a policy that lacks a solidaristic component is both socially unjust and unsustainable. Thus there is some recognition in the insurance industry that a fully risk-sensitive insurance regime would be socially unacceptable (Houston et al 2011 p.48). This recognition is clearly expressed in the response of the ABI to the ministerial statement:

> No country in the world has a free market for flood insurance which provides affordable and accessible cover for high risk households without some form of Government involvement and it makes no sense to rule out a subsidy before Defra have even done the analysis. To ensure potentially 200,000 high risk households have access to flood insurance in 2013, the Government needs to…help develop a sustainable subsidy model which is paid for either by taxpayers, low risk households or both. (ABI, 2011b)

Given a commitment to some form of social solidarity, the central argument is to what degree solidarity should be included and what form it should take. The presumption of the Defra report, in favour of market-based solutions, and against both solidaristic risk-sharing and sensible regulation of planning, stands in the way of developing an agenda to protect those who are vulnerable to flooding. It also carries its own long-term economic as well as social implications. Preventing the blighting of neighbourhoods will not only prevent harm to those affected, it will also reduce demands on public resources in the long term in comparison to those that would be required for their subsequent renewal and regeneration.

There are a variety of different forms more solidaristic regimes for flood insurance can and do take (Box 1), ranging from those that involve publicly resourced provision and subsidies, to those that involve some form of cross-subsidy through a common levy paid into standard insurance schemes. Among current participants in the debate in the UK, different proposals involve different degrees of social solidarity. One model the ABI have been considering is a hybrid system which would involve insurance that is fully sensitive to risk up to a particular threshold of risk. Properties above that threshold would be in a system of pooled risks that would allow some cross-subsidisation within that pool so that premiums would be below a price that fully reflected the levels of risk (Oxera, 2011). Other recent proposals have been more substantially solidaristic. In particular, the approach for insurance reform offered by the Morpeth Flood Action Group moves much further in a solidaristic, risk-insensitive direction, away from a market-based risk-differentiated regime:

> In a situation where continuing climate change has the potential to vastly increase the flood related costs of private insurance companies year on year – the cost of covering flood damage was £3 billion in 2007 – the market led approach to the financing of flood risk in the UK no longer works. It does not provide viable solutions for significant numbers of properties in need of flood insurance. Without government involvement the prevailing culture of laissez-faire is unsustainable. (Morpeth, 2010 3.1)

In its place they initially proposed a private-public scheme in which: flood insurance is mandatory for all property; insurance premiums are differentiated not by risk but by the value of the property being insured; and the funds collected through the insurance companies are passed on to an agency which administers payments. This proposal appeals to a more solidaristic, risk-insensitive model of insurance provision.

> 'A community cannot prosper if sections of it are rendered unsaleable or uninhabitable. The concept of pooling resources and sharing costs is a fundamental principle of insurance and is evident in many areas of British life – one person subsidises the NHS medical treatment of their neighbour, another person contributes to the education of their neighbour's children and a town dweller subsidises the cost of postal delivery to someone living in a remote area. The proposal for a flood insurance scheme follows the same principle.' (Morpeth, 2010, 3.4.9)

More recently, the Morpeth Flood Action Group has offered a revised proposal that does offer some element of risk-differentiation within a solidaristic model (Morpeth, 2011a). A universal 'Community Flood Levy', based either at a flat rate or a percentage of the premium, would be charged on all household insurance policies. This would subsidise those at higher risk, but households above a particular council tax band in those areas would still pay some premium to reflect that higher risk.

Conclusion

Different proposals for future flood insurance each appeal to different arguments, both about the justice and efficacy of each kind of insurance schemes. The central arguments for more solidarity-based schemes appeal to the socially inequitable consequences of risk-differentiation, and the tremendous social costs of excluding some individuals from the prospect of accessing such insurance, both in terms of the direct effects on their own lives, and in terms of the knock-on effect of blighting potentially huge swathes of housing. We have argued in this report that any plausible theory of justice requires a strong solidaristic component to an insurance regime for flood. It has not been our aim in this *Viewpoint* to argue for any particular scheme. We have noted that there a variety of forms such a scheme could take (Box 1), including that advocated by the Morpeth Flood Action Group.

Given that the lack of contents insurance is particularly evident in low-income households and among those in the social and private rented sector, justice requires that any solidaristic scheme includes particular measures aimed at protecting those groups. A minimal requirement of justice in any new flood insurance regime is that it protects the most vulnerable. The increase in insurance premiums that would result from a risk-sensitive market regime does not meet this requirement. Rather it will worsen their position.

Any just policy must find some place for social solidarity in the design of insurance arrangements for flood. The alternative is to create a situation in which we would be predictably causing not only a sizeable swathe of blighted properties, but also very many blighted lives. It is for good reason that almost no other advanced country has countenanced a purely market-based approach to this important matter of public policy. As climate change brings policy on flood management further up the public agenda, it is vital that public debate about the future of flood insurance moves beyond Defra presumptions in favour of purely market-based solutions. Instead, a range of policy options must be given serious consideration, recognising that the regulation of flood insurance is not merely a technical question, but a question of social justice.

Glossary of special terms

Individualist, risk-sensitive insurance – forms of 'mutual' insurance where individuals' payment into the 'risk pool' is proportional to their level of risk, as with private motor or travel insurance.

Solidaristic, risk-insensitive insurance – forms of insurance where those bearing lower levels of risk contribute to the support of those bearing higher risk, as with the UK National Health Service.

Brute luck – those risks which individuals face through no fault or choice of their own are matters of *brute* luck.

Option luck – those risks which individuals face as the result of choice are a matter of *option* luck.

Luck-egalitarianism – a choice-sensitive view of justice that holds that individuals are entitled to the equalisation of those aspects of their situation that are the results of *brute luck*, but that individuals should bear the costs and benefits associated with their own choices and *option luck*.

Moral hazard – a situation in which individuals or organisations do not bear the costs of a particular risk and hence lack incentives to change behaviour to reduce that risk. In insurance, it refers in particular to the phenomenon whereby an individual who is able to insure against a particular risk now has less incentive to reduce their exposure to that risk, as when a fully insured driver of a rental car is indifferent about the prospect of the vehicle being damaged through his careless driving, and hence drives less carefully than he otherwise would have done.

Gateway social good – a particular kind of significant social good, access to which is important for stable access to, and enjoyment of, other goods.

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