insuring we fail? flood risk, vulnerability and the limits to 'bouncing back'

By promoting 'business as usual' rather than adaptation in the face of increasingly severe flood events, flood insurance can act to embed risks in the built environment and prevent the installation of measures to mitigate vulnerability, say Paul O'Hare, Iain White and Angela Connelly

Recent floods across the UK have wreaked a scale of devastation that, we are told, will only increase in the future (see Table 1).[1] Although fatalities are rare in the UK, flood waters – usually contaminated with sewerage and other pollutants – destroy possessions, ruin homes and businesses, and severely disrupt the economic and social fabric of entire communities. There is also an acknowledgement that flooding can have a significant impact on the long-term psychological wellbeing of those affected.[2]

As the waters subside, first responders are de-mobilised, media interest ebbs away, and raincoat and wellington-clad politicians return to Whitehall and Westminster.[3] Instead, there is a frenzy of activity as loss adjustors and assessors and construction contractors descend on affected areas to begin the long process of ensuring that structures are safe, buildings are dried, and homes and businesses are restored to something resembling normality.

At least, that will be the experience of those fortunate enough to have comprehensive insurance cover or a benevolent landlord. For others – the uninsured, the under-insured and those simply unable to afford often prohibitively expensive excesses – there will be little assistance. Sometimes already living in some precarity, they may be reduced to living with friends or family until a return home can be contemplated.

Even for those who have insurance, or who will otherwise be compensated for the damage caused by flooding, the road to recovery will be tortuous. In our research with flood-afflicted

Table 1
Properties at risk of flooding in England and Wales

At risk of flooding from rivers and the sea	At risk of flooding from surface water	At risk of flooding from both surface water and rivers and/or the sea	At risk of flooding from groundwater*
2,641,000	3,181,000	660,000	Between 122,000 and 290,000

Environment Agency data from *Managing Flood and Coastal Erosion Risks in England: 1 April 2015 to 31 March 2016*[4] – figures are totals for 'high', 'medium', 'low' and 'very low' categories of flood risk combined

* Not including properties also in areas at risk of flooding from rivers and the sea, but may include properties also in areas at risk of flooding from surface water

communities,[5] respondents likened the stress of dealing with loss adjustors, insurers and subsequently contractors and builders to a second or even a third 'wave' of flooding; frequently inducing more trauma than the initial rising tide of flood waters. So, while insurance is often seen as a resilience 'solution', it brings its own problems, too.

More fundamentally, our research revealed the various ways that the insurance sector serves to *undermine* efforts to adapt to future flood risk. This is important for planners and emergency response managers given the impact that flooding has on property, the vitality of localities, and the perceived importance of insurance in enabling resilience. Consequently, we argue that long-standing operational aspects of insurance conflict with the much newer goal of creating a more resilient society.

Our research calls for increased scrutiny around how insurance functions and reveals critical unintended consequences. In short, by promoting 'business as usual' rather than adaptation, insurance has 'maladaptive' tendencies, embedding risks and failing to mitigate vulnerabilities. Put differently, it is focused on a simple restoration of a pre-shock 'normality', creating the conditions for repeat events and missing opportunities to adapt.

Resilience to disasters: bouncing *back* – or bouncing *forward*?

Recent developments in the concept of resilience emphasise the potential for reorganisation in the face of disaster; not just 'bouncing back' to a previous position following a shock, but evolving or 'bouncing forward'.[6] In this sense, crises can become opportunities to learn, adapt and transform to a state that is less vulnerable.

At the same time, policy has re-articulated those exposed to flooding not as flood 'victims', but as citizens with an active role in flood risk management. As part of this responsibilisation agenda, people exposed to flooding are encouraged to employ technological measures[7] and to learn to 'live with water';[8] or, to put it another way, to be resilient.[9] This includes encouragement to purchase insurance which, in return for a usually modest annual premium, provides assistance in the form of services or financial compensation in the wake of a disaster.

In this respect, insurers are crucial to rebuilding and recovery efforts, promising security in the face of disaster through risk transfer and the restoration of 'business as usual' for civil and commercial life. Yet when we examine precisely how the sector operates, we see that this role involves a series of tensions with resilience, including how it contributes to moral hazard, how it conceals 'risk-pooling', and how reluctance to pay for property improvement (or betterment) undermines efforts to reduce the damage of any future flooding.

Risk transfer, risk pooling and moral hazard

Insurance is essentially a strategy of risk transfer from those immediately exposed to a peril to another entity. Insurers often take almost complete control of rebuilding efforts, arranging for authorised contractors to conduct reinstatement work. The guarantee of such a service is used to promote insurance schemes as companies vie to provide attractive packages in competitive marketplaces.

Consequently risks are now shared; between communities exposed to the potential hazard and those with responsibility to respond and provide recompense. This principle of risk transfer – whereby property-owners cede responsibility to insurers – has significant implications. For instance, when the costs of a hazard, such as flooding, fall elsewhere, the willingness to implement efforts to reduce exposure or transform behaviour can be eroded.[10] This scenario is a long-standing challenge for insurers, who refer to it as 'moral hazard'. It is not without some irony that insurers, working in an industry predicated on affording protection to clients, can therefore reduce incentives to adopt less 'risky' behaviour.

A further concern associated with risk transfer is 'risk-pooling' – another principle inherent to all insurance schemes. In essence, insurance premiums are pooled into a shared fund that is used for

Interior of a flooded property, Cumbria, December 2015

Post-flooding aftermath, Cumbria, December 2015

compensation in the event of a peril occurring. Risk-pooling also occurs with regard to individual premiums, whereby cover for flood insurance is frequently bundled within a general household and contents package. However, this practice has the effect of dissipating financial exposure throughout all policyholders and within an insurance 'package'. While convenient for both the insured and the insurance provider, this bundling masks the particularities of any one individual threat. It cross-subsidises and further embeds risk, and in doing so disincentivises the integration of adaptation measures to further flood resilience.

The betterment barrier

Although undoubtedly devastating for those communities affected, the aftermath of a hazard can offer an opportunity to adapt to avoid any such incidents that may occur in the future. With respect to flooding, this might include the installation of flood-resilient building materials, altering building services to be above future flood levels, or the integration of property-level protection measures.[11,12]

However, after a disaster the insurer operates as the de facto owner of properties. The insured relinquish not only the financial obligations associated with the rebuild and recovery, but also a significant degree of autonomy in deciding *how* property reinstatement should take place. Homeowners are often housed elsewhere, and in some cases are forbidden to re-enter buildings until structural safety checks take place and buildings are made safe for re-entry. They are both literally and metaphorically kept at distance from properties, unable to keep a close eye on rebuilding efforts.

Meanwhile, the insurer focuses on returning to a pre-shock state as quickly as possible. Generally, insurers adhere to the indemnity principle, whereby property 'betterment' (or property improvement) is forbidden. Rather, insurers promise to reinstate to the *original* condition. This frequently excludes the installation of resilient materials that can reduce the propensity and costs of flooding as they may cost slightly more or are not a 'like-for-like' replacement.

While understandable from a commercial perspective, this focus on the restoration of 'business as usual' undermines efforts to 'build back better', with long-term limitations. Properties, although restored, are no better adapted to cope with any future flood, ultimately rendering people, and society more generally, no more resilient. This was neatly summarised by one research participant, a homeowner who reported that: 'After the first flood my insurer was great! They sorted everything out – a new home; even a new telly! But that didn't stop flooding a second time. Or a third time...'

The maladaptation cycle

While acknowledging the benefits of insurance, our research identifies a paradox for the insurance

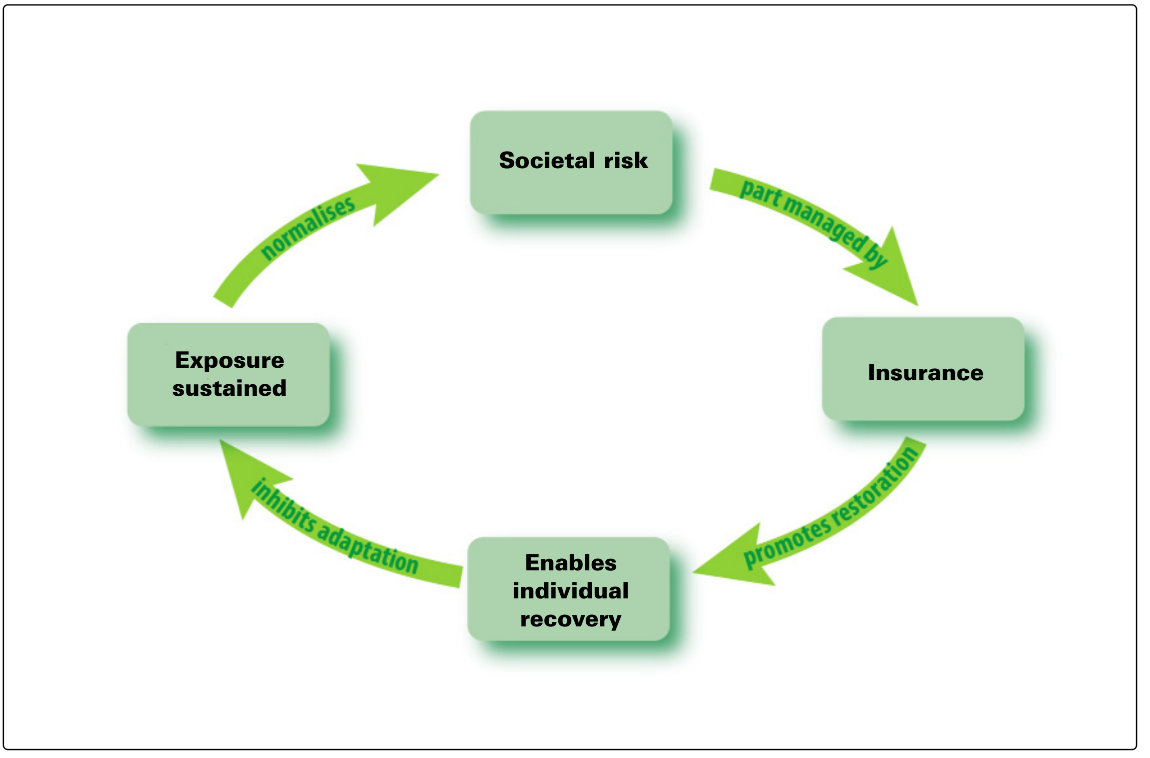

Fig. 1 The maladaptation cycle

sector, for governments and policy-makers, and for society more generally. Insurance allows recovery, but it insulates from the costs of living with risk, divorces hazard drivers from the outcomes of specific events, fosters moral hazard, and inhibits the uptake of measures that can help property-owners to adapt to risk. As such, insurance drives a largely hidden cycle of maladaptation – actions (or inaction) that may provide short-term benefits but that ultimately increase future vulnerability, particularly in the context of climate change.[13,14]

There are also social justice consequences. For example, maladaptation can exert a disproportionate burden for vulnerable groups, who may struggle to lobby for extra resources, experience multiple debilitating events, or be unable to move elsewhere. It can also limit opportunities for future generations to act as risks and liabilities become further embedded.

Returning to the specific case of flood insurance, we can illustrate this by describing the 'maladaptation cycle' (see Fig. 1). First, risks are articulated as pervasive, and we are encouraged to live with them (stage 1). In response, individuals and communities assume greater responsibility to manage these risks, such as by purchasing insurance (stage 2). However, insurance promotes rapid recovery and fails to encourage adaptation (stage 3). This, ironically, sustains overall exposure (stage 4) and drives overall societal risks – and so the cycle goes on.

This maladaptive cycle frames the 'business as usual' paradox: insurance enables short-term recovery at property scales, but simultaneously drives risk on long-term societal levels. There is no doubt that insurance enables individual recovery, but we need to integrate the sector more strongly to the flood and climate change adaptation agenda to better respond to our increasing flood risk.

Notably, there are some examples of how the maladaptive cycle has been broken through government intervention. After the winter of 2013/14 and the 2015/16 floods in the UK, each affected homeowner could apply for a one-off grant (Repair and Renew or Property Level Resilience schemes) to make their properties more resilient to floods. That said, there are early indicators that this initiative, which would only ever pay for a fraction of a holistic resilient refurbishment of a property, has had only a limited effect. Many people declined the grant, citing a range of reasons, from an unwillingness to deal with local authority bureaucracy to concern that their reinstatement could be delayed through the engagement of such initiatives.

There are, too, hopes that the new Flood Re scheme[15] will stimulate a generational shift towards more risk-reflective insurance pricing that might incentivise greater personal responsibility for personal flood risk management. Yet Flood Re does not apply to properties constructed after 1 January 2009. Where at risk from flooding, such properties are now intended to be built with flood resilience. However, there are concerns that not all local authorities or developers are taking their responsibilities to manage flood risk as earnestly as they should be.[16]

These points notwithstanding, for the most part communities are treated as passive receptacles of risk by insurers – 'protected' but potentially locked in a maladaptive cycle of detriment and recovery. This, ultimately, maintains the status quo, leaving risky behaviour unchallenged and revealing the necessity of different risk stakeholders converging the aspirations of their respective interpretations of resilience.

The challenges for planning

Insurers frame *hazard preparation* by influencing the urban fabric and social conditions that will encounter any future storm or hazard. The long-standing operational norms of insurance serve to commercialise and reproduce the consequences of risk rather than engendering any system transitions or adaptive behaviour. An emphasis on 'business as usual' or 'like-for-like' restoration – so central to the marketing of insurance – is ill-suited to reducing broader socio-cultural drivers of risk. Paradoxically, therefore, insurance perpetuates risk, privileges recovery over precaution, and promotes a limited – if not false – sense of security.

Such a posture is detrimental to long-standing planning advice that urges a precautionary approach in flood risk management. That should be of concern to planners across the country who will come under greater pressure to deliver new developments, which often means building on a flood plain. Planners – simultaneously held accountable for flood risk mitigation and adaptation – will ultimately need to ensure that new developments are flood resilient from the outset in order to circumvent over-reliance on insurance as an inadequate flood risk management measure.

● ***Paul O'Hare*** *is a Senior Lecturer in Geography and Development at Manchester Metropolitan University.* ***Iain White*** *is Professor of Environmental Planning at the University of Waikato in New Zealand.* ***Angela Connelly*** *is a Research Associate in the School of Environment, Education & Development at the University of Manchester. This artilce is based on a paper by the authors, 'Insurance as maladaptation: resilience and the 'business as usual' paradox', published in . Environment & Planning C: Government & Policy (2016, Vol. 34 (6), pp.1175-93). The views expressed are personal.*

Notes

1 *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Intergovernmental Panel on Climate Change (IPCC), Mar. 2014. www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-IntegrationBrochure_FINAL.pdf

2 W. Medd, H. Deeming, G. Walker, R. Whittle, M. Mort, C. Twigger-Ross, M. Walker, N. Watson and E. Kashefi: 'The flood recovery gap: a real-time study of local recovery following the floods of June 2007 in Hull, North East England'. *Journal of Flood Risk Management*, 2015, Vol. 8 (4), 315-28

3 G. Haughton and I. White: 'Groundhog day – the great floods of 2015'. *Town & Country Planning*, 2016, Vol. 85, Mar., 134-7

4 *Managing Flood and Coastal Erosion Risks in England: 1 April 2015 to 31 March 2016*. Environment Agency, Dec. 2016. www.gov.uk/government/publications/flood-and-coastal-risk-management-national-report

5 P. O'Hare, I. White and A. Connelly: 'Insurance as maladaptation: resilience and the 'business as usual' paradox'. *Environment & Planning C: Government & Policy*, 2016, Vol. 34 (6), 1175-93

6 See I. White and P. O'Hare: 'From rhetoric to reality: which resilience; why resilience; and whose resilience in spatial planning?'. *Environment & Planning C: Government & Policy,* 2014, Vol. 32 (5), 934-50

7 I. White, A. Connelly, S. Garvin, N. Lawson and P. O'Hare: 'Towards best practice in property level flood protection'. *Town & Country Planning*, 2015, Vol. 84, Feb., 82-7

8 *Making Space for Water: Taking Forward a New Government Strategy for Flood and Coastal Erosion Risk Management in England*. Department for Environment, Food and Rural Affairs, Mar. 2005. Available at http://coastaladaptationresources.org/PDF-files/1329-Making-space-for-water.pdf

9 *Understanding the Risks, Empowering Communities, Building Resilience: the National Flood and Coastal Erosion Risk Management Strategy for England*. Unnumbered Act paper laid before Parliament. Session: 2010-2012. HM Government, 23 May 2011. www.gov.uk/government/uploads/system/uploads/attachment_data/file/228898/9780108510366.pdf

10 A.H. Thieken, T. Petrow, H. Kreibich and B. Merz: 'Insurability and mitigation of flood losses in private households in Germany'. *Risk Analysis*, 2006, Vol. 26 (2), 383-95

11 A.V. Connelly, V. Gabalda, S. Garvin, K. Hunter, D. Kelly, N. Lawson, P. O'Hare and I. White: 'Testing innovative technologies to manage flood risk'. *Proceedings of the Institution of Civil Engineers – Water Management*, 2015, Vol. 168 (2), 66-73

12 See also the Centre for Resilience's 'Homeowner' webpage, at www.centre4resilience.org/homeowner/

13 J. Barnett and S. O'Neill: 'Maladaptation'. *Global Environmental Change*, 2010, Vol. 20 (2), 211-3

14 D. McEvoy, S. Lindley and J. Handley: 'Adaptation and mitigation in urban areas: synergies and conflicts'. *Proceedings of the Institution of Civil Engineers – Municipal Engineer*, 2006, Vol. 159 (4), 185-91

15 See the Flood Re website, at www.floodre.co.uk/

16 *Flooding: Cooperation across Government*. HC 183. Second Report of Session 2016-17. House of Commons Environmental Audit Committee. TSO, May 2016. www.publications.parliament.uk/pa/cm201617/cmselect/cmenvaud/183/183.pdf