

Turning the tide: Proposals to reform flood policy



Introduction

Flooding is a challenge that is as serious as it is complex. Finding ways to live safely and prosperously in our increasingly flood prone country is essential. The Environmental Industries Commission's members, who have a wide range of flood protection expertise, have produced a 10 point plan to tackle this pressing threat. We would encourage the Government, especially in the context of the National Flood Resilience Review and the tragic floods over the winter period, to consider these recommendations.



The human cost of flooding is immense

The financial cost of flooding is high. Average UK flood damage costs are currently **£1.1bn per year**, while the costs of the most recent bout of winter floods will top £5bn. However, these figures do not convey the human cost of flooding. KPMG estimates that 20% of the cost will fall on families and businesses with no or inadequate insurance. On the ground, 5,000 homes were flooded by Storm Desmond and 60,000 were left without power making for a miserable Christmas and New Year.

💧 It's apparent that I cannot live here for the foreseeable future as my floor is collapsing into the cellar. I couldn't get insurance after the 2012 flooding, so I've lost everything. **Mindy, Manchester**

💧 The heaviest part of the flooding was during the 26th and 27th of December, we were confined to our building but thankfully had enough supplies... I even saw fish swimming on our street, never thought I'd see something like that. **Raj, Cumbria**¹


2016 Winter flood impact estimates:

- £5-5.8bn total losses
- 0.3% reduction in GDP
- Insurance claims up to £1.5bn
- Personal costs of £1bn
- £2bn to repair flood defences
- £750m cost to local authorities
- £100m loss to businesses from indirect factors (loss of market share etc)


¹ Guardian Witness, 2015 'UK floods: your photos and stories' Guardian Online. Available at <http://www.theguardian.com/environment/2015/dec/31/uk-floods-your-photos-and-stories>


We must reassess our national approach to flood issues

Climate change means that recent incidents of flooding over the last decade are unlikely to remain exceptional. Researchers at Oxford University and the Royal Netherlands Meteorological Institute (KNMI) calculated that climate change had made Storm Desmond 40% more likely.

 We need a public debate about **prioritisation and equity**. Governments have tended to correlate flood defence priorities with asset value at risk. This can mean that high-value areas are protected better than less economically and demographically significant areas. However, areas with increased levels of deprivation or economic challenges may find it harder to recover from flood damage. Alternative approaches to prioritisation which address this should be considered, as should issues such as need to protect critical infrastructure.

 Other wealthy flood affected countries routinely have **higher absolute levels of protection**. Although the Netherlands faces a very different flood risk compared to the UK, it has defences that will protect the most economically important parts of the country from storms that might be expected once in every 10,000 years. By comparison, the UK's best defences, located in London, are only equipped to deal with a one in 1,000 year event. Typical defences in Britain are often designed to protect against a once in 100 or 150 year occurrence.

 The Government needs to re-evaluate the measures it uses to justify the commissioning of flood defences. The **cost-benefit analysis ratio criteria for flood defences** has been increased from 1:5 to 1:8. This means that in the past, for flood defence plans to be approved, they had to be predicted to save £5 for every £1 spent, now they must be predicted to save £8 for every £1 they cost to build. These high standards mean that fewer flood defences will be approved for construction. Of course, public spending must deliver value for money, but given that roads projects can be approved at a 1:2 assessment, there may be a case to change flood defence criteria.


 A breakdown of the National Infrastructure Delivery Plan conducted by the Independent makes clear that **all are not equal** when it comes to flood defence. At the margins, just £33 is spent per person in the Northeast, while in the Southeast, the figure is £167. If we are prioritising critical infrastructure and economic value, that decision must be transparently made and accountable to the public.

We need to maximise the application of 'big data' to flood policy

Collation and analysis of 'big data' and the use of techniques such as 'data visualisation' can improve the assessment and communication of flood risks and predictions of impact.

💧 Databases are being created by public and private bodies alike, each attempting to tackle a granular flood protection issue. What the UK lacks is a cohesive database on flooding that is accessible and up-to-date. [Defra's recent push](#) to use its big data more effectively could be a watershed moment and should be seen as a measure that extends beyond agriculture. This measure will spur growth in private sector flood expertise and allow government to better protect people and property.

💧 One example of where existing data could be used more effectively is [Resilience Direct](#). It is a tool used by the Cabinet Office to plan for and react to flood risk. Sensitive information should of course be protected, but for the private sector to take more responsibility for flooding, this data must be more quickly and easily available.




There are four main types of flooding:

- fluvial (river),
- pluvial (surface water),
- tidal (coastal surge)
- groundwater flooding


Flood policy is complex as it needs to distinguish between these different types of flood threats and ensure that flood defence planning and flood defences themselves are appropriate and fit for purpose.


Public engagement must be improved


Creating a more nuanced public view of flood risks and issues is vital. We need to make people feel the same way about installing flood defences on their properties as they feel about burglar alarms; we need those in flood risk areas to be as engaged in flood resilience as with the local school.

 **Lack of awareness** about defence measures or distrust because of past failures work as a disincentive for property owners to take real action to make their homes and businesses safe.

The Environment Agency found in 2009 that just 55% of people living in flood risk areas know that they are at risk, and only three fifths took 'some' action to prepare for floods. Bodies like the [Flood Advisory Service \(FAS\)](#) are independently bringing effective products to communities struck by flooding, but these efforts must be better supported by government.

 **Smart technology** can play a role. We should consider finding new ways to alert communities about flooding. River gauges that live tweet river levels and advise local people on flood risk are certainly a step forward. Now that smart phones are almost ubiquitous, perhaps phones sold in flood plains should come with a regional flood alert app as standard.

 The '**1 in n year event'** **flood description system is not fit for purpose.** As a result of climate change, the severity of floods are increasing, which means the goalposts always seem to be shifting. Likewise, the colour-coded red, amber and yellow warnings are too vague – how should I practically prepare for a red storm compared to a yellow one? Communicating risk levels to the public is a challenge in many policy areas and needs more thought for flooding.

 Environment Agency early warnings of flood risk don't always reach those who need them. Currently the system in place is opt-in. Instead, people living in flood plains should be warned by default, and the service should instead be 'opt-out'. This idea has already been [successfully piloted.](#)

New construction should be future-proofed for flood risk

The UK needs new housing, commercial developments and infrastructure upgrades in areas such as transport and energy. This development must be designed with future levels of flood risk firmly in mind.

💧 Sustainable Drainage Systems (SuDS) can help avoid new development making flooding worse. Holistic appreciation of ground conditions and hydrodynamics for sites intending to use SuDs will ensure that SuDs are appropriately designed and remain resilient in the long term. Design must incorporate surface water and groundwater interaction, and a registry of SuDs should be maintained by local authorities so that the potential for cumulative impacts can be assessed as part of planning.

💧 Role of development supply chain – Regulation will not be stringent enough to cover every eventuality though designers and consulting engineers often design with appropriate flood protection in mind. However contractors aiming to meet financial imperatives can reduce best practice to legal minimums without realising the flood risk created.

💧 Future reviews of building standards should include the need to update minimum flood protection.

Around
5 million people
live in flood risk areas in
England and Wales.



Property Level Protection requires a new approach

Not all flood risk areas can be comprehensively protected and so Property Level Protection (PLP) is an important part of flood policy.

However, PLP requires home and business owners to take some responsibility for action and investment and it is vital that there is a framework that provides support and advice.

💧 To keep the momentum in the PLP sector, improvements must be made in the demand and supply of these products. The private flood defence sector has worked with BSI to develop new **BSI standards** on installation, qualifications for flood engineers as well as new Kitemark products so that the public can rest assured that their property is protected. The government needs to support and promote these standards.

💧 Learning the lessons of the **Repair and Renew Grant** is critical to establishing long-term PLP across the UK. We need a system that is proactive rather than reactive and we have to encourage consumers to choose to protect their own homes. The government should make the grant available independent of specific flood events and match individuals' expenditure. The grant should feature on council websites as prominently bin collection, benefits and council tax and the scheme needs to be properly resourced so Local Authorities can administer the funding. Finally, it is of critical importance that government funded PLP must be BSI compliant and installed by trained flood professionals.

An export opportunity: The UK has many innovative firms working in PLP. The priority should of course be to protect UK businesses and properties first, but looking ahead, the UK has huge PLP export potential. One indication that the market is set to grow is expected global urbanisation trends – the world's urban population was 3.6 billion in 2011, but by 2050. 6.3 billion will be city dwellers.

The insurance sector can do more

A working insurance market is critical. The government has taken the welcome step of establishing ‘**Flood Re**’ to address the issue of high-risk properties that insurers felt unable to cover. The scheme involves insurance companies paying a levy to Flood Re so that the risk can be shared evenly between them in the future.



Flood Re does not extend to commercial properties, but this should be changed. The policy as it is means that if SMEs experience flooding and do not already have insurance, they are likely to experience significant damage and lose business even months after the water recedes.

Insurers need to incentivise property owners to improve their protection levels by **decreasing premiums for individuals that install PLP**. Currently, this attitude to betterment is not widespread and Flood Re should build this practice into its contracts with insurers.

Furthermore, Flood Re stands to end after 25 years. This means that there is uncertainty about what will happen once the 25 year period elapses, especially in a context of rising sea levels and increased precipitation associated with global warming.

The Environment Agency's structure should be reviewed

Flood defence is becoming an ever more important part of the Environment Agency's role but it is less clear that it benefits from the Agency's very broad general environmental regulation role.

💧 The National Flood Resilience Review should consider the case for a **Water Agency** which was resourced to deal with flooding, combined sewer overflows (CSOs) and water quality. Of course, there are clear theoretical benefits in including flood management within the EA's general remit. In practice however, the resources and expertise required for waste management regulation for example are very different to protecting homes in a flood event. With the need to devote greater focus to developing future flood policy there is a case for a change to the structure.



Recommendations

1

Initiate a national debate on the priorities of future capital expenditure for flood defence.

2

Review the UK's comparatively low protection criteria and the 1:8 cost benefit ratio for flood defence approval.

3

Make the Resilience Direct database more accessible. Aggregate disparate databases into one national data bank.

4

Introduce an easily understood flood risk scale.

5

Use smart technology to improve the quality of warnings. Make Environment Agency alerts 'opt-out'.

6

Make flooding a primary consideration in planning policy and continue to clarify SuDS standards.

7

Support innovative British property level protection firms both domestically and internationally.

8

Review the Repair and Renew Grant so that it is a genuine, long-term incentive for individuals to improve their property defences.

9

Reform Flood Re so that it includes SME property, ensure policy holders are rewarded for improving their defences by reducing premiums.

10

Consider restructuring the Environment Agency and setting up a new Water Agency.

About EIC

The Environmental Industries Commission (EIC), founded in 1995, represents the businesses which provide the technology and services that deliver environmental performance across the economy. In short, we are the voice of the green economy. Our members are innovative and the leading players in their field, and include technology manufacturers, developers, consultancies, universities, and consulting engineers.

Our member companies come from all parts of the environmental technology and services sector – a growing part of the economy. This pamphlet was inspired by our Water Management Working Group which counts among its members PLP specialists, flood risk mapping companies, large engineering consultancies, environmental laboratories, environmental consultancies and water quality firms.

For further information on the content of the report,
contact the lead author:

Olly Johnson
EIC Policy Executive
T: 020 7654 9945
Oliver.Johnson@eic-uk.co.uk

For more information contact:

The Environmental Industries Commission
Alliance House
12 Caxton Street
London
SW1H 0QL
T: 020 7222 4148

info@eic-uk.co.uk
www.eic-uk.co.uk
Follow us on twitter – @EICUKtweets