

ONSITE

FLOOD RISK MANAGEMENT



The majority of funding goes on flood defence rather than increasing resilience

Building a better system for flood resilience

► A consistent, comprehensive and transparent framework should be adopted to ensure the full range of impacts are identified and assessed for flood resilience. MWH's Dr Bruce Horton explains why.

PROJECT SPECS

- Revise the current funding regime to incentivise more sustainable approaches to flood resilience
- Consider the full environmental and social impacts of land use in the decision-making

More than six million properties are currently at risk of flooding. More people are being affected by more severe and more frequent flooding, and this is a situation that is likely to worsen. The drivers, which include land use change, housing and infrastructure growth (caused by population growth and demographic changes), climate change and deteriorating assets, are well understood.

The impacts of flooding are also well known, albeit difficult to estimate. They include risk to life, damage to property, distress and anxiety, environmental damage, disruption to families, communities, infrastructure, and to the economy.

According to one estimate, this winter's floods are expected to cost the insurance industry, homeowners, businesses, infrastructure providers and others more than £5bn*.

But how is flood risk management funded now? The majority of funding for flood risk management goes on flood defences, rather than increasing our general resilience against flooding. Capital spending on flood

defences of around £0.7bn a year comes from the general taxpayer, via Treasury grant-in-aid (Defra, 2015). Last year, maintenance accounted for a further £171M.

In total, this represents around 90% of total spending on flood risk management.

High risk areas

There is an array of other, smaller sources of funding. These include the Local Levy (a levy on local authorities raised by the Environment Agency's Regional Flood and Coastal Committees), Partnership Funding (with contributions from local communities and central government), drainage charges (raised by Internal Drainage Boards), local authorities and European funding.

Most (though not all) families and businesses affected by flooding are protected by insurance policies.

The new Flood Re scheme, operational from last month, aims to ensure that affordable flood insurance remains widely available to those in high risk areas for the next 25 years.

Is there anything wrong with the funding regime? Well, the current funding regime

could be revised to incentivise more sustainable approaches to flood resilience. There are two underlying issues that we need to resolve:

Firstly, the bulk of funding on flood defence, including capital spending and emergency assistance, is provided by the general taxpayer. This could be changed to strengthen the relationship between those who contribute to flood risk, those who benefit from flood risk reduction*, and those who pay.

Secondly, the full environmental and social impacts of land use decisions need to be considered in the decision making of planners, developers, farmers and others. This will help optimise flood risk management decisions from a societal perspective.

What principles, then, should we use to build a better system for flood resilience, and how could we implement it? There are a number of small steps that can be taken to move us in the right direction.

1. Since there are scarce resources for flood risk management funding (it is not practical to protect all properties in all circumstances), a fair and

transparent means of making investment decisions is needed. This should be based on an analysis of costs and benefits at the overall programme level to decide how much should be invested overall in flood risk management generally, and flood defence specifically, as well as at the individual scheme level, to decide how to allocate this expenditure.

2. The full range of financial, environmental and social impacts - both public and private - should be considered in all flood risk management programmes, projects and schemes. As well as 'traditional' flood defence, this includes sewer flooding, sustainable drainage (SuDS) and green infrastructure. It also includes wider land use planning, development and management in both urban and rural areas. A range of tools are available for this purpose and can account for positive and negative impacts on areas like health, recreation and biodiversity, as well as on flood risk itself.

3. A consistent, comprehensive and transparent framework should be adopted for ensuring the full range of impacts are

considered, identified and assessed. Various frameworks have the potential for this, including ecosystem services approach and natural capital accounting

4. Consideration should be given to affordability, regional and sectoral impacts as well as economic efficiency. A distributional analysis can identify those who stand to gain or lose, and help ensure that appropriate compensatory or other measures are considered

5. The 'polluter pays principle', already embedded in implementation of the EU Water Framework Directive, could be applied to flood risk. Wherever possible, this would require those who contribute to increased flood risk to compensate those affected (or contribute an amount equivalent to the increase in risk towards a flood risk scheme)

6. Where additional funds are required to deliver a scheme, the 'beneficiary pays principle' would, again wherever possible, require those directly benefitting from flood risk reduction or from other impacts of the scheme to make up the balance

7. A reputable and competent party could ensure that investment funds are collected, allocated and distributed in an appropriate way. There are well-known problems with the current system (Helm, 2016), particularly with regard to reliability and predictability of funding. Whilst any alternative will come with its own set of issues, local authorities or wastewater service providers may be the best candidates for a greater role in this area

8. Existing subsidies for land use, in particular for agricultural production, should reflect contribution to, and reduction of, flood risk. This applies particularly to upper catchments, where any potential costs (e.g. in terms of foregone food production) would be relatively low, but where the benefits, in terms of

reducing flood risk or providing natural capital for recreation, leisure and biodiversity, are likely to be highest

9. Insurance policies should reflect the true cost of providing cover to new properties and buildings in areas of risk, and incentivise property level flood risk protection measures in existing properties

With these principles, the existing system for funding flood risk management can be improved. Change won't happen overnight, but these nine elements would help us evolve the system. And evolution is exactly what is needed if we are to ensure that flood risk management supports more sustainable outcomes to the benefit of us all.

■ Dr Bruce Horton is principle sustainability consultant at MWH.

* <https://home.kpmg.com/uk/en/home/media/press-releases/2015/12/flooding-economic-impact-will-breach-5bn.html>

** Whilst elements of some of the benefits of flood risk reduction are public (e.g. avoided environmental damage), many others are private.

*** See for example BeST (Benefits of SuDS Tool), <http://www.susdrain.org/resources/best.html>

References

Defra (2011) Understanding the risks, empowering communities, building resilience: The national flood and coastal erosion risk management strategy for England. Presented to Parliament pursuant to Section 7 of the Flood and Water Management Act 2010

Defra (2015) Central Government Funding for Flood and Coastal Erosion Risk Management in England, Department for Environment, Food and Rural Affairs, December 2015

Helm, D. (2016) Flood defence: time for a radical rethink

TECHKNOW

- Consideration should be given to affordability, regional and sectoral impacts
- A fair and transparent means of making investment decisions is needed
- A reputable and competent party could ensure that investment funds are collected, allocated and distributed in an appropriate way

NEED TO KNOW

↑ This winter's floods are expected to cost more than £5bn

↗ Last year, maintenance accounted for a further £171M

↘ The Flood Re scheme aims to ensure that affordable flood insurance remains widely available

THE VERDICT

"With these principles, the existing system for funding flood risk management can be improved. Change won't happen overnight, but these nine elements would help us evolve the system"

Dr Bruce Horton



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