

# Fit for the future? An assessment of flood insurance in Ireland

**Swenja Surminski**

**Discussion note**

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In collaboration with:



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# 1. Overview

Increased flood risk as a result of climate change and socio-economic trends is a major challenge for Ireland. To manage flood risk effectively more needs to be known about the economic costs of flooding and its impact on economic activities in the short, medium and long term. This is the focus of a research project conducted jointly by University College Cork (UCC) and the Grantham Research Institute on Climate Change and the Environment.<sup>1</sup>

A particular focus of the research project is the role of insurance in improving homeowners', businesses' and communities' resilience to current and future flooding, and an exploration of how flood insurance in Ireland could be reformed to be 'fit for the future' in the context of climate change.

**The aim of this discussion note** is to facilitate external scrutiny of and consultation on our research as well as to support the discussion during the webinar scheduled for 23 February 2017. The findings presented in this note are the result of a literature review, assessment of existing data and information, and discussions with stakeholders. We seek further input and evidence to complement our assessment.

The discussion note includes:

- Research context
- Research aims and scope
- Methodology for analysing flood insurance provision in Ireland
- Preliminary findings

## 2. Research context

Insurance mechanisms offer a more effective way of addressing the costs of disasters than reliance on post-disaster payments (see, for example, Hallegatte, 2014 and Brainard, 2008). The sharing of risks and the distribution of the costs of compensation make insurance an attractive disaster response mechanism, particularly for large catastrophic risks (Mechler *et al.*, 2014). Yet the underwriting of disasters such as flooding presents many challenges due to the potential for catastrophic losses (Kunreuther, 1996).

Access to flood risk data is essential for any flood insurance scheme, but quality and use of data can become politically sensitive. In many countries there is concern that the premiums associated with insuring flood risks may exceed the consumer's ability or willingness to pay, or that the private sector may find flood insurance commercially unattractive (Surminski, 2014). These issues form the backdrop of the current debate about flood insurance in Ireland.

The last few years have seen a range of public reports and investigations, by the Joint Committee on Environment, Culture and the Gaeltacht (Joint Committee, 2012), the Joint Committee on Finance, Public Expenditure and Reform (Houses of the Oireachtas, 2015b), a Department of Finance-led initiative to explore reform options with the Interdepartmental Flood Policy Co-ordination Group publishing an interim

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report (IFPCG, 2016), and most recently the introduction of the Flood Insurance Bill 2016 before the Dáil Éireann (House of Representatives).

The discussions informing these reports and investigations have focused on the availability of flood insurance, driven by concerns about growing difficulties to access flood insurance for some households and for small and medium sized enterprises (SMEs). At the core of the debate is the use of flood risk information for underwriting and the level of public and private flood risk management efforts.

The insurance industry stands accused of a geocoding approach that does not recognise recent advances in flood protection and therefore discriminates against those homes and businesses that stand to benefit from those measures (Joint Committee, 2012). However, rising risks, lack of investment and planning restrictions present a key concern for insurers. The industry argues that exclusions are necessary to reflect rising risk levels and maintain insurance provision at affordable rates for those at lower risk (Houses of the Oireachtas, 2015a).

The memorandum of understanding (MOU) between the Office of Public Works (OPW) and Insurance Ireland, entered into in early 2014, was designed to address the conflicting views on the use of flood risk information for underwriting purposes. Under the MOU, Insurance Ireland agreed to ensure insurers would take flood defence measures adopted by the OPW into account when making underwriting and pricing decisions, provided the OPW can provide information on those defences and, in general, can verify they satisfy a 1:100-year standard (MOU, 2014). Data is provided under the MOU in tranches (IFPCG, 2016). However, the adoption of the MOU appears to have failed to mitigate concerns that certain properties remain unable to access flood insurance.

### 3. Research aims and scope

Our research explores how flood insurance could be reformed to be 'fit for the future'. In particular, we focus on two aspects often overlooked in these discussions:

**1. How is climate change factored into flood risk information for flood risk management and insurance?**

We investigate the use of flood risk information by different stakeholders, and consider if and how future risk trends, including climate change, are factored into risk assessments.

**2. How can insurance be used to address current and future risk levels?**

We investigate whether or not insurance is supporting flood risk reduction, based on the understanding that insurance can boost risk reduction if designed and structured accordingly, which in turn can help secure future affordability and availability of cover.

## 4. Methodology

Our research methodology has two stages:

**Stage 1: Stock-take and analysis of the current flood insurance provisions in Ireland across five performance parameters.** This is based on the framework developed by Kunreuther and Kousky for disaster insurance in the US (forthcoming), with the five parameters as follows:

- (1) **Technical risk cost modelling and risk communication.** How are the costs of a risk modelled and calculated? To what extent is the 'true' cost of the risk visible? Is it communicated effectively? Are risk costs incorporated into property design, prices or development decisions?
- (2) **Roles of the public and private sector.** What functions do the public and private sectors perform? How much of the risk does the public sector bear? In what ways does the programme encourage or discourage private market involvement?
- (3) **Incentives for risk reduction.** Does this programme have explicit or implicit incentives for reducing risk? Is there evidence on the magnitude of these incentives? Are there grant funds? How is funding for risk reduction targeted? What roles do zoning, building codes and land use play in connection with insurance?
- (4) **Take-up rates.** What are take-up rates for insurance? What are the contributing factors? How is purchasing of insurance handled for those not able or willing to pay for coverage? How are take-up rates influenced by other financing mechanisms and other governmental programmes, such as provision of disaster aid or hazard mitigation programmes?
- (5) **Rate setting and the distribution of the costs of catastrophes.** How does the programme distribute the costs of a disaster event? Are there implicit or explicit cross-subsidies? Is there some level of premium beyond which consumers resist paying? How are the most extreme events financed? How does the programme balance pre-event and post-event financing?

**Stage 2: Testing current flood insurance provisions against eight principles of sustainable flood insurance** (based on Defra, 2011):

- (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.

This analysis will generate practical recommendations for policy development and reform.

## 5. Preliminary findings

### Stage 1 results

As outlined above, current flood insurance provision in Ireland was analysed against five broad parameters (based on Kousky, 2017 and Surminski, 2017). We deploy a mix of quantitative and qualitative metrics and criteria, based on available data analysis, stakeholder interviews and a review of existing literature. Table 1 summarises the findings against each parameter.

**Table 1. Summary of interim findings from analysis of current flood insurance provisions in Ireland across five performance parameters**

Parameter	Interim findings (more evidence being sought)
1. Technical risk cost modelling and risk communication	<p>The modelling approach is unclear: insurers are using in-house models; commercial models are under development (by RMS). Insurers are also using public risk data prepared by the Office of Public Works.</p> <p>Whether or not insurers are considering climate change implications factored into public food risk assessments is unclear.</p> <p>There is concern about the use of a broad geocoding mapping approach and lack of recognition of flood risk management efforts by insurers. This is encapsulated in the following quote from the Joint Committee (2012): ‘It does seem insurance companies are geocoding parts of the country in a blanket approach. Accordingly, a house deemed to be in a flood-risk or subsidence-risk area will not get cover. For example, it is impossible to get flood insurance for a dwelling within 100m of a river even if it is an apartment 100 ft. off the ground.’</p> <p>The true cost of risk is not visible to policy-holders due to the bundling of flood insurance with household policies.</p> <p>Risk costs are not incorporated into property design or development decisions.</p>
2. Roles of the public and private sectors	<p>The private sector underwrites flood insurance and handles claims; the public sector is responsible for flood risk management. There is a Memorandum of Understanding between insurers and government to govern the use of flood risk information, but it has been accused of having little practical weight in this regard (Scanlon, 2016).</p> <p>Concerns exists on both sides:</p> <ul style="list-style-type: none"> <li>• Insurers are concerned that the Government has failed to prevent building in flood risk areas (Houses of the Oireachtas, 2015a).</li> <li>• The public sector is concerned that insurers do not recognise improvements in flood risk management (IFPCG, 2016).</li> </ul>
3. Incentives for risk reduction by policy-holders	<p>There is no evidence that risk reduction measures such as property improvements are recognised by insurers at the point of underwriting.</p>
4. Take-up rates of flood insurance	<p>There is evidence of coverage gaps and increasingly unaffordable rates, for example in Cork (O’Sullivan, 2016). A lack of comprehensive data means that it remains unclear to what extent flood insurance is actually available/being refused in high-risk areas.</p> <p>Take-up rates remain relatively high due to bundling and mortgage requirements, but there is growing concern about the lack of availability in high-risk areas and after a flood: anecdotal evidence suggests property owners are having difficulties in getting flood insurance after flooding events (Houses of the Oireachtas, 2015b).</p>

	<p>Insurance Ireland has a 98% penetration rate because flood cover is a standard part of household insurance (IFPCG, 2016).</p> <p>Data from the Office of Public Works on 16 flood defence schemes shows the penetration rate is 89% in areas with fixed flood defences compared with 78% in areas with demountable defences (Irish Times, 2016).</p> <p>Insurance coverage in Clonmel, the Dodder Estuary, Fermoy and Mallow is as low as 78% because flood defences in those areas are not rated at the 1:100-year standard (IFPCG, 2016).</p> <p>Anecdotal evidence suggests that homes and businesses in Cork are being denied flood insurance in the wake of recent flooding events (Houses of the Oireachtas, 2015b). No percentage figure was provided regarding the proportion of properties not covered.</p> <p>There is no evidence relating specifically to SME coverage. This is a significant gap in information.</p> <p>A Household Budget Survey conducted in 2010 concluded that up to a third of Irish households had no insurance (IFPCG, 2016).</p>
5. Distribution of the costs of disaster events	<p>Flood insurance is the main funding mechanism, supplemented by ad-hoc government relief measures and some support measures for SMEs (Irish Red Cross, 2016).</p> <p>Anecdotal evidence exists of implicit cross-subsidisation between low- and high-risk properties (Houses of the Oireachtas, 2015a).</p>

## Stage 2 results

Testing the interim results against the eight principles of sustainable flood insurance (Defra, 2011) provides the following picture:

- **Principle 1: Insurance cover for flooding should be widely available.**  
Penetration rates are high – proper data assessment is needed to establish the rate of insurance for homeowners and SMEs.
- **Principle 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.**  
Insurers apply a risk-based pricing system in principle, but in practice there are concerns about geocoding and a lack of transparency with regards to the use of flood risk information for underwriting.
- **Principle 3: The provision of flood insurance should be equitable.**  
There was not enough data to assess in this area but concerns emerged about lack of access to insurance in some regions, both for homeowners and for SMEs.
- **Principle 4: The model should not distort competition between insurance firms.**  
There is no evidence of any distortion of competition; there are a number of insurers in the market from across Europe.
- **Principle 5: Any new model should be practical and deliverable.**  
The current flood insurance model has been in operation for a long time – paying out claims and offering cover to most homes and businesses in Ireland – and has been recognised by the European Commission as efficiently developed (IFPCG, 2016).



- Principle 6: Any new model should encourage the take-up of flood insurance, especially by low-income households.**

Although anecdotal evidence suggests take-up rates are high at an aggregate level, there is no data on penetration differences across income groups. There appear to be no specific activities aimed at actively encouraging the take-up of flood insurance among low-income households.
- Principle 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.**

Limited data means it is unclear whether the charging for risk-based premiums is having an impact on the adoption of property-level resilience measures. There is no evidence that insurers encourage or incentivise the adoption of property-level resilience measures. It is unclear to what extent practices such as geocoding are having a deterrent effect on the adoption of flood defences (including by the Government).
- Principle 8: Any new model should be sustainable in the long run, affordable to the public purse and offer value for money to the taxpayer.**

The current model is affordable at an overall level, but its lack of focus on future risk trends and risk management efforts is problematic. If penetration of flood insurance decreases this would increase costs for tax-payers. The key is to find the right balance between private risk transfer, private risk management and public risk management.

## Conclusions on our two research questions

### How is climate change factored into flood risk information for flood risk management and insurance in Ireland?

- Initial findings:** Use of flood risk information remains controversial and needs further clarification and efforts from both sides: insurers and the public sector. Public flood risk assessment includes climate change projections, but whether or not this is taken into account when making public policy decisions (planning, investment) remains unclear. Insurance data use remains intransparent.

### How can insurance be used to address current and future risk levels?

- Initial findings:** More transparency about flood risk levels and flood risk management efforts is needed. Insurers and government could collaborate and run joint campaigns (information sharing, advising on flood risk management) for homeowners, businesses and local government but this would require collaboration and trust. It is important to identify shared interests and to be transparent about the costs of flooding.



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