



Society of Actuaries in Ireland

Public Consultation on Climate Change and Insurance in the context of the “Climate Action Plan 2019 to Tackle Climate Breakdown”

Response to Department of Finance Consultation Paper

October 2019

Preface

The Society of Actuaries in Ireland (“Society”) is the professional body representing the actuarial profession in Ireland.

We welcome the opportunity to submit this response to the Department of Finance Public Consultation on “Climate Change and Insurance in the context of the Climate Action Plan 2019 to Tackle Climate Breakdown”.

A number of the Public Consultation Questions are directed at individual consumers and policyholders and we have not answered these. We have provided some general commentary on each topic addressed in the Consultation.

We would be happy to respond to any questions on this response – please contact Philip Shier, Actuarial Manager, at Philip.Shier@actuaries.ie.

General comment

Whilst the title of the paper is “Public Consultation on Climate Change and Insurance in the context of the Climate Action Plan 2019 to Tackle Climate Breakdown”, the content is exclusively restricted to flood insurance. A few examples of other areas of insurance that could be impacted by climate change include:

- Crop insurance;
- Windstorm;
- Electric vehicles;
- Life and health insurance.

In particular, there is evidence to suggest that both the frequency and severity of extreme weather events will increase as a result of climate change. For example, the past 2 years have seen Hurricane Ophelia (2017) which was the easternmost Atlantic hurricane on record whilst Hurricane Lorenzo (2019) was the easternmost Category 5 Atlantic hurricane on record.

The Society believes that a wider scope should be taken in considering the implications of climate change on insurance. We note also that the Insurance Supervision Directorate of the Central Bank of Ireland has informed the insurance industry that it will *seek to engage further in relation to climate change, and emerging risks more broadly*¹.

However, the Society has limited its response to the current consultation paper to the topics raised in the paper. The Society would welcome the opportunity to engage on the wider issues in the future.

Current Government Policy on Mitigating Flood Risk

The Society cautions against placing too much reliance on the CFRAM study. Whilst the Society acknowledges that its members are not experts in flood modelling specifically, actuaries are experts with considerable experience in financial and other projection models.

- Typically, such models can rely on key assumptions. However, the nuances of the uncertainty and sensitivity to key assumptions are not communicated in this consultation paper, with the 1-in-100 measure taken as an accepted fact.
- Further, many actuaries working in non-life insurance have considerable experience in catastrophe risk modelling; it is commonly accepted that flood risk modelling is difficult and not as progressed or as reliable as windstorm modelling for example.
- The 1-in-100 year flood risk measure is not necessarily the best measure. The perception is that a 1-in-100 year flood is a very remote possibility – in practice, over the course of a 30-year mortgage, a house in a 100-year floodplain has a 26 percent chance of being inundated at least once².

¹ <https://www.centralbank.ie/docs/default-source/Regulation/industry-market-sectors/insurance-reinsurance/solvency-ii/communications/insurance-quarterly-news/the-insurance-quarterly---september-2019.pdf>

² This number is derived using probability theory. First, we calculate the probability of there not being a flood over a 30-year period. Since for each year, there is a 99 percent chance of there not being a flood, the chance that there is no flood over 30 years is 74 percent (or $.99^{30}$). The probability of a house in a 100-year floodplain being inundated at least once, then, is just the complement, so 26 percent.

To quote an article³ from the statistical website fivethirtyeight.com following Hurricane Harvey in Texas, “the concept of the “100-year flood” is one of the most misunderstood terms in disaster preparedness... a “100-year flood” is not a flood that you should expect to happen only once every 100 years. Instead, it refers to a flood that has a 1 percent chance of happening in any given year.”

- It is important that such models are calibrated for expected future rainfall and not historic events; this is uncertain in the context of changes in rainfall patterns as a result of climate change and possible increased frequency and severity of extreme weather events.

Public Consultation Question

1. Have you encountered greater difficulty either getting or renewing flood cover due to weather/climate-related issues?

Response: N/A

Public Consultation Question

2. Do you agree that managing flood risk is the best way of increasing insurability? If not you might explain why, and also you might set out what additional approaches you think would be more effective.

Response: In principle yes, but there may be lag effects, and unintended consequences of flood prevention works. Insurance provides protection for fortuities, not certainties. There is not – nor should there be – any requirement on insurance companies to provide insurance in areas that are subject to frequent flooding. In such cases, the cost of managing flood risk might outweigh the benefits of increased insurability. Such costs are not solely monetary, but also include the environmental and societal costs of flood management works. For example:

- dredging works destroying natural habitats;
- loss of habitat and loss of amenity with replacement of natural habitat with concrete banks.

Property insurance is generally written as a mass market product, with desktop underwriting using a property’s geocode and flood maps. All insurers use the same flood mapping systems and so will reject the same properties. Therefore, local flood management works may not be reflected in increased insurability until the market-wide flood mapping systems are updated. Even then, insurers may wait until the efficacy of flood management measures is proven before providing insurance in particular flood-prone areas.

³ <https://fivethirtyeight.com/features/its-time-to-ditch-the-concept-of-100-year-floods/>

Insurance

Whilst the statement is correct that the Solvency Capital Requirement is determined as the economic capital to be held by insurance and reinsurance undertakings in order to ensure that ruin occurs no more often than once in every 200 cases, in practice insurance companies hold a significant buffer over this amount. On the other hand, it should be noted that there are risks which can hit different insurers simultaneously, for example a catastrophe event would impact several market insurers at the same time.

“Consequently, for example in pricing demountable flood risk, insurers have to take account of the range of possibilities which may occur. These include the risk of overtopping as well as the possibility of the barriers not being installed or incorrectly installed, thus leading to flooding. This latter risk whilst low in probability does have a high impact should it occur, and companies are expected to factor this into their risk management strategy and the corresponding pricing.”

Residential property insurance is a commodity product, generally sold on a mass-market basis. As noted above, only large commercial properties are generally underwritten on an individual basis. Whilst there are some market players who will underwrite risks that other insurers decline, this is done on a cost-effective basis (for example, using Google street view to identify properties located at a higher level in an area that would otherwise be declined). For the reasons stated, insurers are likely to be cautious about accepting properties in previously declined areas for insurance until the efficacy of flood relief programmes have been tested and proven.

Public Consultation Questions

3. Do you have any particular comments or views on the above?

Response: See above. It is important to note that Solvency II principles apply at the entity level across all its risks, rather than to the specifics of individual risk acceptance decisions. These will depend on each company's risk appetite, underwriting policy, and the role of reinsurance.

Aside from flooding are you aware of any other climate-related exclusions in any property insurance policies you hold?

Response: N/A

4. Have you had a claim refused arising from weather/climate-related issues?

Response: N/A

Current Government Policy to Increase Flood Insurance Coverage

Public Consultation Questions

5. Do you agree with the Government's strategy to increase flood insurance coverage?

Response: Generally speaking, flood prevention rather than subsidisation of insurance is a preferable way of increasing flood insurance coverage. Subsidising coverage in high-risk areas limits incentives for governments and property owners to take actions that reduce risk. For this reason, insurance alone cannot sustain affordability in high-risk areas⁴.

That said, increased transparency and public availability of data should generally improve insurer ability to price risk.

6. If you disagree, what alternative approaches are available to the Government? In responding to this question you might outline the benefits of such an alternative vis-à-vis the current approach and provide a view on the potential long-term costs of it.

Response: Whilst increasing flood insurance coverage is generally desirable, a robust cost-benefit analysis must be taken into account in terms of the cost of flood relief schemes, including the societal and environmental costs of such schemes (see above).

⁴ <https://www.cigionline.org/sites/default/files/documents/PB%20no.134.pdf>

7 Issues around Flood Coverage

Public Consultation Questions

- 7. *What do you think can be done to increase the level of flood insurance in areas where demountables have been built?***

Response: We note the discussions with Insurance Ireland in this regard. It is noted in the Interim Report to Government Interdepartmental Flood Policy Co-ordination Group that a flood forecasting model will take several years to be operational – any reliance on demountable protections must take this into account.

- 8. *What if any reasons have been provided to you by insurers where insurance has been refused where flood defences have been built?***

N/A

- 9. *Have insurers demonstrated any flexibility when you have engaged with them on this matter; for instance providing cover with an excess?***

N/A

- 10. *What are your views on the use of policy excesses/ policy exclusions as a risk management tool by insurers?***

Response: Flood insurance claims are generally very costly and an increased excess is of limited value as a risk management tool in such circumstances – whilst it will slightly reduce the severity of a claim for an insurer, it but is unlikely to have much impact on claim frequency.

As noted above, insurance is designed to cover fortuities. Where a property is located in a flood-prone area or has a history of flooding, policy exclusions are a useful tool for insurers to continue to provide coverage for other perils.

Public Consultation Questions

- 11. *Do you agree that from a cost benefit analysis perspective that there may be areas where it will not be possible to manage flood risk sufficiently so as to make them insurable?***

Response: Yes, as discussed above.

- 12. *If you disagree with this statement, please explain why. For instance do you believe flood cover should always be available, even where there is certainty that a location will be flooded regularly?***

N/A

- 13. *Where insurers have declined to provide flood cover, have they offered cover for other household risks such as fire and theft?***

N/A

The Department's 2016 Review of Possible Alternative Approaches to Flood Insurance

Public Consultation Questions

14. Please provide any views you have on options 1 to 3 above.

Response: As noted above, generally speaking, flood prevention rather than subsidisation of insurance is a preferable way of increasing flood insurance coverage. Subsidising coverage in high-risk areas limits incentives for governments and property owners to take actions that reduce risk.

As stated in the consultation paper, the UK's Flood Re model is often cited as an example that the Government here should follow. We note that Flood Re was established in parallel with significant investment in flood prevention programmes, and we feel that this is imperative for any pool-type approach.

As actuaries skilled in the evaluation and measurement of risk we do not advocate for Option 3 (compulsory insurance) – there are some properties which simply would not be insurable at any price. Further, there could be unintended consequences, where very high insurance premiums introduce moral hazard (property owners make fraudulent or spurious claims to get value for money).

15. Are there any other options that the Government could consider?

Response: Development levies could be higher for flood-prone areas to compensate for the additional cost of building flood defences and flood monitoring and warning systems and any government-sponsored insurance schemes.

16. Do you agree that if the Government were to put in place an insurance pool arrangement that it would have to manage its long-term exposure to such an arrangement? How would it do this? For instance, should it exclude businesses, or houses built after a certain date from the pool as has happened in the UK with Flood Re?

Response: Yes, if the Government were to put in place an insurance pool arrangement then we agree that it would have to manage its long-term exposure to such an arrangement. How to best do this would depend on the specifics of any pool arrangement put in place; certainly, reinsurance should be considered in order to cap the State's exposure.

Public Consultation Questions

17. What are your views on the feasibility of a Flood Re type approach?

Response: Flood Re appears to have worked well in the UK, based on the statistics in the 2019 Report⁵. Obviously, there are economies of scale achievable in the UK that are not achievable in Ireland. However, there is considerable insurance management expertise in Ireland with an established captive management industry which may be able to provide management facilities at better value-for-money than suggested in the consultation paper.

⁵ <https://www.floodre.co.uk/wp-content/uploads/Flood-Re-Annual-Report-2019.pdf>

18. If you favour such an approach, what can be done to make it more attractive to industry to develop?

Response: We would need to undertake further research in to the UK experience before we could provide any answers to this question.

We refer the reader to the Institute and Faculty of Actuaries' ("IFoA") Policy Summary entitled "*The future of UK flood policy*"⁶ which sets out the IFoA's position on the achievements of Flood Re so far, and the longer term issues that various actors need to grapple with in order to ensure its success. In particular, we concur with their view that Flood Re is a temporary measure rather than a long-term solution. If high risk of flood persists, insurance will continue to be unaffordable for those living in high risk areas.

19. Do you agree with the limitations imposed on Flood Re in the UK as to who it should apply to?

Response: Yes, in general there should be conditions and limitations on the properties eligible for inclusion in any pool system.

20. Do you have any views on the US system?

Response: The political and governmental structure in the US is very different to that in Ireland, which makes it difficult to see how a similar scheme could be applied in practice in Ireland.

21. What are your views on Individual Property Protection (IPP) as a concept, even though it does not seem to have had any impact from a cost of insurance perspective in the UK yet?

Response: Nothing to add to the observations in the consultation paper.

6

<https://www.actuaries.org.uk/system/files/field/document/Policy%20summary%20UK%20flood%20policy%20FINAL.pdf>

10 Data and Flood Cover

“...where it appears that sometimes insurers make generalised decisions about flood risks in particular areas based on their sense of the risk rather than on any precise understanding of the real underlying situation.”

Such an approach by insurers would not be optimal in a competitive market, and we are not aware of any evidence to support this assertion. As noted above, household insurance is a commodity, mass-market product and underwritten using flood map systems. Insurers, particularly the larger insurers, may use blanket rules and exclusions. Market forces do allow other insurers to exploit this, for example by individually underwriting the house at the top of the hill which may be a better risk that other insurers reject.

Public Consultation Questions

22. What do you think can be done to increase flood risk data transparency?

Response: A data sharing platform whereby anonymised data is publicly available, such as that currently being developed for personal injury claims, could be implemented.

23. Do you accept that greater flood risk data transparency can also have the effect of making flood cover in certain areas more difficult to obtain?

Response: This would be a possible outcome.

Public Consultation Questions

24. What are your views on the role for InsurTech in broadening insurance provision in relation to climate/weather-related events? Please outline any ideas you have as to how this could be done.

Response: We have no comments on this issue at present.