

**Feedback re Public Consultation on Climate Change and Insurance in the context of the 'Climate Action Plan 2019 to Tackle Climate Breakdown' July 2019**

**To:** insurance@finance.gov.ie

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Apologies for delay in getting this feedback to you.

I am a member of the Climate Change Advisory Council; I agree with the submission made by our chair Professor John FitzGerald on the Council's behalf. The points I make below are provided in a personal capacity, and range wider than the questions you posed for feedback. They are informed by my previous roles: UCD (Heritage Trust Professor); chair of Comhar Sustainable Development Council, and of SEAI; and most recently as chief Economist of the Environmental Defense Fund, NY.

Decisions on taxation and on public expenditure determine how well economic and environmental performance are integrated and delivered. The Department of Finance plays the key role in this regard, so its involvement in addressing the interface between climate and insurance policy is especially welcome.

I found that the consultation document to be well-argued, and have no issue with the content per se, beyond those reflected in the CCAC note. My reflections focus on areas that are not very explicitly addressed, but that need to be embedded in the thinking and practise of the Department of Finance as it shapes this very important agenda.

Below, I address the following 6 issues: correct the asymmetry of attention in regards to EU legislation; how to reduce costs for new entrants; recognize the dramatic outliers that can occur independent of climate change; pay more attention to costs and benefits – both before (*ex ante*) and after (*ex post*); pay more attention to adaptation and its reflection in insurance costs; beware moral hazard and adverse selection.

**1. Correct the asymmetry of attention in regard to EU legislation**

Considerable attention is devoted to the implications of the Solvency II Directive. Given the past experience with rogue insurance companies who under-priced risk to increase market share, which then resulted in the penalizing of all insurers with levies to cover the costs of this delinquency, this is understandable. However the prudential should not dominate to the exclusion of economic efficiency; equal attention should be devoted to the Competition directives, and especially the imperative to ensure that there are no barriers to entry to the Irish market, especially as regards specialists that are willing to understand and take on the risks of providing flood insurance and be encouraged and facilitated in doing so.

**2. How to reduce costs for new entrants**

In international terms, the total market is small. "Insurance Ireland members wrote gross property insurance premium of €869.2m in 2017 (up 3.1% on 2016). The property insurance market recorded a net underwriting profit of €72.6m in 2017 compared with a net underwriting profit of €84m in 2016." (Public Consultation Document P. 12). To get engagement of new entrants in the flood prone segment of this market will require that transactions costs facing new entrants who have expertise in the pricing of such markets be minimized

The Irish policy system needs to creatively address the following question: How can we make it as easy as possible for new entrants to productively engage in this market? Of particular value in this regard in enabling new entrants will be deepening our understanding of the evolving science of climate impacts, and its translation into expectations as regards Irish experience. There is rapid and positive evolution of the climate impacts' literature, anchored by innovations in climate econometrics and its integration with climate science - see for example Climate Impact Lab (<http://www.impactlab.org/>) and Climate Econometrics (<https://www.climateeconometrics.org/>) There is a parallel literature emerging on the issue of 'tipping points' in climate change and the associated economics thereof.<sup>[1]</sup> It is important that the Irish policy system, including DoF and the insurance companies (incumbents and prospective new entrants) be fully informed as to this work and its implications, as it evolves.

Most users of information seek insights as to the probabilities (range estimates) of flooding before and after the implementation of the relevant Catchment Flood Risk Assessment and Management program. I found the information provided in [www.floodinfo.ie](http://www.floodinfo.ie) to be incomplete, but no doubt this is a work in progress which will evolve over time.

### 3. Recognize that dramatic outliers can occur independent of climate change

The 'Night of the *Big Wind*' occurred 180 years ago (6th and 7th January 1839) and is recognized as the most devastating storm ever recorded in Irish history, with claims that 'the hurricane made more people homeless in a single night than all the sorry decades of eviction that followed it.'

<https://www.irishtimes.com/culture/books/the-calm-before-the-big-wind-of-1839-was-particularly-eerie-1.3257684>

It is odd that this is not benchmarked more widely in the discourse about impacts. The fact that it occurred before the near doubling of atmospheric CO<sub>2</sub> raises the question: Does the latter make a recurrence more likely? How would the measures now underway see Catchment Flood Risk Assessment and Management (CFRAM) - deliver in terms of outcomes if it recurred?

### 4. Pay more attention to costs and benefits – both before (*ex ante*) and after (*ex post*)

In the Catchment Flood Risk Assessment and Management (CFRAM) program "The Government has committed almost €1 billion to flood relief measures as part of the National Development Plan 2018-2027. These measures will be implemented through a 10-year programme delivering 118 new flood relief schemes, protecting 11,500 properties." (Public Consultation Document, P. 10)

#### Costs

This is the only information we have on estimated costs in the consultation document. The average estimated cost per property is €1,000,000,000/11,500 = €86,956. It is not clear to what extent, if at all, maintenance costs are included in this estimate, or what the upper and lower ranges of costs might be.

It is important that parity of analytical esteem be given to the conservation, management and restoration of natural capital that mitigates the intensity and duration of flooding, reflected in the options developed, and in the skill sets employed. The OPW has traditionally favoured civil engineering expertise, which is typically reflected in its staff composition Getting the balance right between built (dams, levees, tunnels, walls etc.) and natural capital (wetland restoration, etc.) can deliver three

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<sup>[1]</sup>See invite to seminar in UCD on Nov. 22, 2019, on this topic, led by Thomas Stoerk, to which all are welcome.  
<https://www.eventbrite.ie/e/tipping-points-in-the-climate-system-and-the-economics-of-climate-change-tickets-77797972831>

dividends – lower costs, better performance, and less environmental destruction. It is difficult to draw conclusions from perusal of the Flood Risk Management Plans as to the extent to which this balance is recognized and achieved.

### *Benefits*

The only measure of benefit considered is the “increase in flood insurance cover”. This is understandable in the context of the terms of reference, but is wholly inadequate as measure of the benefits to well-being delivered by the CFRAM programme. Perhaps the most comprehensive estimate of economic impact on property would be the difference in the value of properties with and without CFRAM, and there is an extensive methodology developed that provides hedonic estimates of property value impacts. Environmental impacts also need recognition in terms of the value of ecosystem services that are delivered or reduced.

### *Equity*

Property owners will get a considerable dividend in terms of addition to the value of their property (averaging ~€90K, if the increment is at least equal to the costs of protection provided by the general tax payer) as a result of the investment in CFRAM. It would be fair to recoup some of this expenditure for the State in the form of property taxes based on the market value of the properties

### *The value of Ex Post and Ex Ante Analysis*

It is very important that the terms of engagement for CFRAM require that the OPW provide cost and benefit estimates before the projects are initiated (ex ante) and then show the reality of outcomes (ex post)

In Bruton and Convery (1982) the authors assessed the ex-ante and ex post costs and benefits of the land drainage programmes implemented by the Office of Public Works from 1948-55 (Brosna) to the Bonet (proposed). This was only possible because the OPW was required by legislation (Arterial Drainage Act, 1945) to do so and the data were available to assess performance. The study (he said modestly.....) was a valuable validation of the project prioritization applied – projects with the largest net benefits were undertaken first – but diminishing returns had set in and recent projects were costing more than they were delivering.

## **5. Pay more attention to adaptation and its reflection in insurance costs.**

There is an emerging ex-post literature in the US showing the differential impacts on property damage of extreme weather events, depending on the methods of construction.<sup>[2]</sup> It is important to (a) encourage the development of, and then implementation of, innovations that increases the resilience of buildings and (b) to reflect such developments in premia.

## **6. Beware moral hazard and adverse selection**

It is much more difficult to undo bad policies than to avoid them, so precautionary thinking and analyses can have a large payoff to effort. Two examples:

New Zealand (Canterbury and Otago) dairy farmers have embraced irrigation, much of it using ground water; this is one of the explanations for the rapid expansion of the dairying business in these regions. However, in many cases, it appears that well drilling and pumping got underway with inadequate mechanisms in place to assign property rights, and ensure prudent management of prospective water scarcity and the environmental ‘spill-over’ effects, especially as regards water quality and ecosystem services

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<sup>[2]</sup> Personal Communication, Robert Kaufmann, Boston University, ([kaufmann@bu.edu](mailto:kaufmann@bu.edu)), October 21, 2019

In the US, the costs of a federal crop insurance program have escalated: the total net cost of the program for crop years 2007-2016 was about \$72 billion, of which \$43 billion (60%) was of direct benefit to producers, \$28 billion (39%) went to private insurers, and \$754 million (1%) went to the Risk Management Agency (RMA) within the U.S. Department of Agriculture (USDA). The escalation in costs is a product in part of moral hazard (farmers planting in areas with a high risk of failure, knowing that losses will be covered), and adverse selection - the tendency of higher-risk farmers being more likely to purchase insurance than lower-risk farmers.

Source: <https://www.everycrsreport.com/reports/R45193.html>

Drought and farm insurance are not yet on the Irish policy radar, but they could become a preoccupation in the future.<sup>[3]</sup>

In the immediate Irish context, the main risk of strategic behaviour is where land is initially zoned as high risk of flooding (Scenario A) and land prices reflect this policy; then the zoning is changed to allow building, and the revised land prices reflect this new status (Scenario B). Buying land under A, and selling under B, is a rent-capture practise where we in Ireland have some form, and the policy system needs to reflect the reality of the powerful incentives to game the system

### Reference

Bruton, Richard, and Frank J Convery, 1982. *Land Drainage Policy in Ireland*, Policy Research Series No. 4, Economic and Social Research Institute, Dublin, July. 93 pp.

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<sup>[3]</sup> Milton Friedman observed that “When crisis occurs, the actions that are taken depend on the ideas that are lying around.” Very appropriately, the focus at present is on flooding. However, at some point, it may be necessary to also to address persistent drought, and the infrastructure and policies that make sense, including insurance, in addressing this phenomenon, for farming and forestry (water supply for other uses would also come to the fore in this context).