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Natural Disaster Insurance Review - Submission

A. Framework for Dealing with Natural Disaster Resilience - including Insurance

1) Distinguishing Foundation Principles from Exceptional Cases

The Issues Paper, for the understandable reasons described surrounding recent catastrophic flood events in Queensland and elsewhere, dominantly focuses on the home asset losses associated with flooding and problems arising with insurance cover. These are indeed critical issues.

However, the Review Panel needs to ensure that a holistic approach is taken to delivering community resilience to all forms of natural disasters. Failure to do this risks delivering a Review report that is ad hoc, concentrates mostly on solving select legacy issues and leaves unaddressed major problems with insurance in other areas of natural disaster resilience.

Page 18 of the Issues Paper sets out sound elements of an optimal insurance solution for flood cover. This should be recast as the elements for an insurance solution for all natural disasters, including flooding. The optimal insurance solution, founded on sound public policy principles, should represent the starting reference point for the Panel's framework in its Report and Recommendations.

It will certainly be the case that special provisions will be required that deviate to a degree from an optimal insurance solution, in order to provide pragmatic solutions to real and serious community needs. But these should be cast as exceptional provisions and not interpreted by the community as general best practice. For example, the Issues Paper sets out the case for some form of subsidised Flood Insurance Pool - such an approach has merit to deal with unavoidable legacy problems of existing homes located in high risk flooding locations; but the Review needs to make clear that when Governments puts in place a first best policy framework in response to this Review it is the optimal insurance solution that represents the general case, and that special provisions are tightly defined and presented as the exception.

Special cases will not be confined to flooding. For example, climate change will in future increasingly test the limits of robustness of current insurance arrangements which are presently viewed as sound - a topic addressed in this Submission.

Recommendation 1: *The Review Report should be founded upon an optimal insurance solution that spans all natural disasters; and special provisions should be proposed to deal with exceptional cases such as the legacy problem of existing homes located in high risk flooding locations.*

(2) A Forwarding Looking Strategy - Not Just Solving Legacy Problems

There are serious legacy problems regarding natural disasters management, community resilience and insurance. The Issues Paper particularly highlights the problem of existing homes at risk in flood prone locations and proposes steps to deal with those legacy problems.

However, the Review Report should give a strong focus to the full dimensions of future risks associated with natural perils and design an optimal insurance solution to deal with those.

There are important demographic changes happening and forecast that will have a material effect on the risk profile of the community in confronting natural disasters - for example, a strongly growing population, the 'Sea Change' and 'Tree Change' population movement trends, and expansion of the fringes of major cities (with associated implications for absolute numbers of and proportion of homes potentially at risk from sea inundation, flooding and bushfires).

Furthermore, risks of damage from natural disaster events to date have been predicated on the known historical statistical record of frequency, intensity and location of climate driven extreme events. The impacts of climate change have begun to appear and will rapidly become much stronger in coming decades and over this 21st Century. The historical record increasingly will become an unsound foundation for risk assessment - it is the future climate conditions that must shape an optimal insurance solution.

Recommendation 2: *The Review Report should be founded upon a forward looking understanding of the risks of natural disasters (including the implications of demographic changes and of climate change); and not simply upon an appreciation of historical climate patterns and the legacy consequences of past weaknesses in insurance and other disaster resilience arrangements.*

B. Information to Underpin Sound Insurance Markets and Natural Disaster Resilience

Chapter 9 of the Issues Paper addresses questions regarding the extent, quality and uniformity of flood maps around Australia to underpin insurance markets.

Resilience to natural disasters must have as its foundation sound evidence of the likely frequency, intensity and location of extreme natural events and the consequences of those events. This applies for flooding, but is equally a requirement for every other type of natural extreme event that give rise to disasters of national proportions - cyclones, bushfires, hail, and the looming sea inundation, as examples.

The Issues Paper points to weaknesses in flood mapping. But as great (and in some cases greater) weaknesses in the analytical foundation apply for other extreme natural events when it comes to preparing for potentially disastrous events. Some steps have been taken to improve the situation - for example, catastrophic bushfires in recent years have promoted some worthwhile initiatives in characterising places and scale of bushfire risk on a seasonal basis. But fundamentally, Australia is well behind on the potential to implement a sound evidence base for planning, preparation and insurance against extreme natural events.

This Inquiry comes at an opportune time. In the past decade, quality practical and implementable technologies, with much cheaper unit costs have become available to gather spatial information relevant to natural disaster prevention and management. Examples, are repeatable remote sensing at required fine scale resolution (eg individual property scale) and cheap computing capacity for managing the vast quantities of data to profile the range of potential natural event risks that can apply at the property scale. And the scientific community (eg CSIRO and Bureau of Meteorology) are making excellent advances in computer models construction to forecast probabilities of flood events, sea inundation, bushfire incidence and so on.

What is fundamentally lacking in Australia is overall national governance to harness this technological and scientific potential to produce cost-effective, regularly updated, and technically sound practical information products that can underpin framing of evidence-based strategies for national disaster resilience. With good governance, this need not be an expensive exercise - and certainly not when measured against the return on investment that would flow for consumers, governments and the insurance and other businesses.

The Issues Paper in chapter 8 begins to ask the right questions regarding information needed for flood mapping and the governance around gathering this information. But that discussion is too limited - it should be cast in the context of all the extreme natural events that cause national disasters. Proper management of every extreme natural peril depends on public availability right across Australia of this kind of information. And many of the data sets and scientific models needed have multiple uses across the different perils - for example, for flooding and sea inundation. And those information capabilities would serve not just the risks to homes; but would equally be applied to the vast public and commercial assets also at risk from the perils of natural extreme events. And those outputs would underpin the range of the disaster mitigation efforts in land use zoning decisions, building code design standards, property risk profiles driving insurance product pricing, and consumer choice over risk levels when buying homes.

In short, a single national venture in spatial information and risk modelling is needed to meet this combined set of needs. That venture would have massive economic and social benefits in optimising land use and building design, in minimising insurance premiums (because the insurance industry is more confidently able to quantify risks), and in having better informed home buyers (in knowing the level of risks attached to their decisions, and what that means for insurance premiums).

There are various options that could be considered on how the relatively modest costs of such a venture might be covered - it could be met - for example - by the Australian Government; by Governments collectively; by a levy on the beneficiaries (eg insurance companies, householders, infrastructure owners); or some combination of those.

Recommendation 3: *Governments initiate a single national venture, under optimal governance design, and in co-operation with the insurance and other businesses, to produce (and regularly update) spatial information at property scale and to build and operate technical computer models to profile and forecast all significant natural event hazards.*

C. Climate Change and its Implications for Natural Perils and Insurance

(1) Climate Change must be factored in now in framing insurance and other strategies for managing risks of natural perils

Climate change science indicates that climate driven extreme events will typically become more intense and more frequent as a consequence of the growing greenhouse gas concentrations in the atmosphere and the associated warming of the atmosphere and the ocean surface. With the present state of science, there are many uncertainties on the detail of what this means for the occurrence of extreme natural events - but there is a broad picture that is serious and looming over the coming decades and continuing to ever greater degree over this Century and beyond.

This takes on the features, for example, of more intense and frequent heatwaves, drying across southern and eastern Australia (which together combine to intensify future risk of frequency and magnitude of bushfires), more intense heavy precipitation (with consequence for flooding), and rising sea levels with consequences for coastal settlement inundation.

The Australian Government has announced this week its legislative plan to introduce carbon pricing in Australia as the driver for reducing national greenhouse gas emissions. This is a fundamental policy reform on mitigation of Australia's contribution to the global emissions of greenhouse gases. But climate change has begun already because of past emissions and much more climate change is unavoidable because of the vastly greater emissions that are being and will be generated by the big economies - USA, China and so on. Australia has no choice but to pursue the triple pronged strategy adopted by the Australian Government - reducing national emissions, adapting to unavoidable climate change impacts, and striving for global cooperation to deal with this global threat.

As touched upon above, management of natural climate event perils has to date been based on stochastic analysis of the frequency and intensity of past extreme events. That proposition for natural hazards resilience and response is no longer valid - resilience planning and preparation must now be founded upon the projected extreme climate conditions of the future decades.

There is no time to lose in charting this course. Every day myriad new decisions are being made around Australia on land use zoning, on building design standards, on presumed risk profiles of homes for the duration of their economic life, and on financial loans that will run for say 25-30 years. The question becomes, will those decisions be founded on the actual new climate conditions that are emerging because of climate change; or will they be founded on the increasingly wrong proposition that the past climate is a solid guide on how to manage future climate risks. Delay in changing the basis of policies, commercial decisions, and consumer choices applying to decisions on new homes only accumulates an ever greater stock of homes that are located and designed for the risk conditions of historic climate patterns and not the future climate events.

The Issues Paper is strongly focussed on the legacy problem of homes located in high risk flood areas and the limitations in availability of or confusion over flood insurance for homes. With climate change impacts growing in the decades ahead, that legacy problem will be greatly compounded by some existing housing stock presently thought to be at generally low risk from extreme natural events becoming prone to higher risk occurrences of bushfires, flooding etc. This has implications for property values, for insurance premiums, and for risk allocation.

In 2010, the Australian Government released its policy position “Adapting to Climate Change in Australia’. It sets out principles on risk allocation that should be built into the optimal insurance allocation model advocated in Recommendation 1 above in this Submission.

Recommendation 4: *The Natural Disaster Insurance Review needs to give much more attention to the threat posed by climate change to the intensity and frequency of climate driven perils and to ensure that forward looking proposals for reform (see Recommendation 2 above) encompass climate conditions of the future (and not increasingly out-of-date interpretations of past climate).*

(2) Coastal Inundation - Actions of the Sea

In Chapter 8 of the Issues Paper, there is a brief pondering on whether because insurance policies universally do not cover actions of the sea there should be some changes on insurance policies content. The Issues Paper is badly undercooked on this topic compared to the scale of the problem that is looming. And as will be discussed below, failure to deal with the issue would risk undermining a part of the strategy to deal with insurance cover for riverine flooding.

To begin, there should be a clear distinction made between the insurance and general resilience problem that is occurring because of rising sea levels and that due to tsunamis.

Tsunamis (not surprisingly given their same origin in tectonic events) have similar characteristics to earthquakes - potentially huge damage when a high magnitude event occurs but in Australia a very low frequency of occurrence. Disaster planning and preparedness for tsunamis and earthquakes, including insurance arrangements, need to be designed specifically for those circumstances.

But in relation to sea level linked inundation, two centuries of modern human settlement in Australia have been concentrated on the coastal strip which continues apace, and with a constant average sea level with water advancing and retreating with tides and storms. That proposition of stationarity of sea level is no longer true - sea levels have begun rising and the rate of increase is accelerating. Analysis by the CRC on Antarctic Climate and Ecosystems finds that with a 0.5 metre sea level rise parts of the Sydney coast would experience high sea level events 10,000 times more frequently than at present, and other major coastal cities with a 100 -to-1,000 times increased frequency.

Sea inundation caused by climate change induced sea level rise and linked to intensified storm surges driven by climate change will occur with much greater frequency and intensity of sea inundation compared to climate driven events we see today. The 2009 'Climate Change Risk to Australia's Coast' vulnerability assessment published by the Commonwealth Department of Climate Change found that around 247,000 existing dwellings (ie ignoring new developments occurring on the coast) with a building stock value of \$63 billion (ie not taking into account consequences for land values) if there was a 1.1metre sea level rise. (The 2011 Climate Change Commission Report judged that a 1 metre sea level rise - averaged around the Australian coast- was a current best estimate for 2100). This coastal vulnerability assessment only partly took account of simultaneous storm surge and did not factor in the combinative effects of simultaneous riverine flooding and sea inundation in coastal areas (eg a cyclone driven storm surge on a high tide driving water inland, while intense cyclonic precipitation drives riverine flooding into the estuary).

The Issues Paper notes correctly that present insurance policies do not cover sea inundation.

Yet, sea inundation in coastal areas is a potential future problem of at least (and probably greater?) than the uninsured riverine flooding problem dealt with in the Issues Paper.

State and local governments have begun policy action on coastal protection from the risks of sea inundation - typically by requiring land use zoning and development approvals to take into account a presumed level of sea level rise that might occur before the end of this Century.

Recommendation 5: *The Natural Disaster Insurance Review should press strongly for framing of insurance markets, spatial information and response strategies to deal with new housing development on the coast and strategies to cope with future exposure of existing housing developed in an era that assumed a stationary sea level.*

(3) Sea Inundation - a significant complication in resolving the riverine flooding insurance problem and in other respects for the insurance industry

The Issues Paper advances strategies and options for dealing with adequate insurance cover for non-insured homes and under-insured homes subject to riverine flooding.

But as noted above water ingress into a home in a coastal area can be the combined product of riverine flooding. Submissions on the Treasury 'Clearing the Waters' discussion paper on a definition of the term 'flood' identified this as a major problem because flood cover would be voided if the damage is caused by both an insured event (hopefully the home would be protected under its insurance policy for riverine flooding) and an uninsured event (sea inundation). The NDIR needs to propose practical solutions to this problem, as the number of houses affected is potentially significant (and moreso as climate change simultaneously drives future intensification of riverine flooding and sea inundation).

Recommendation 6: *The NDIR should adopt an active position in bringing sea inundation due to sea level rise into the overall framework for insurance cover, and overcome the problems that could arise with combined riverine flooding and sea inundation of homes.*

Sea inundation of erodible sandy shores causes not just damage to buildings. It is also likely to strip away sections of the land and possibly make the site unsafe for future habitation. This raises issues of whether in these circumstances the insurance cover framework to deal with sea level rise needs to deal with asset value loss for both the building and the land.

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