

## **SUBMISSION: REINSURANCE POOL FOR CYCLONES**

**Submitted by Emeritus Professor Bruce Thom AM, FTSE**

1. In June I provided Treasury with a submission on the consultation paper on the reinsurance pool for cyclones and cyclone related damage. In that submission I provided background to my interest in this matter and answered several of the questions. My concerns at that time were on definitions of cyclones, what constitutes cyclone-related damage, geographic area of cover of the pool, and how mitigation activities that might lead to discounts in premiums may have negative or maladaptive effects. It is pleasing to see how several of these concerns have been addressed in the draft legislation and regulations.
2. Since June two papers have appeared that are relevant to this submission. One is by Belrose et al. from the **Reserve Bank** (16/9/21) on climate risks to Australian banks. They raised concerns of mortgage exposure to banks of five climate related hazards, one of which was coastal inundation. They noted highest risk regions are mostly located on the coastline particularly SE Queensland. They state on page 4 “The risk in these regions increase if the affected communities find access to, or affordability of, insurance becomes a challenge”. The second paper was the release on 17/11/21 of the **Insurance Council of Australia** report on climate change impact of “Actions of the Sea”. I attach a blog I wrote on this report. Emerging from this report is the message that there is limited availability of cover due to the “inevitable nature of the risk to exposed properties” and that the industry is seeking ways to reduce this “protection gap” through government investment in risk mitigation. These two reports add both substance to the need for the reinsurance pool and the need for caution as to how it may be implemented.
3. Eligible cyclone related losses covered under the policyholder’s choice of cover, and acceptable to an insurer, most likely will NOT include storm surge where it results from an “action of the sea”. In the words of Andrew Hall, CEO of ICA, “insurers are generally not able to cover ‘actions of the sea’ because of the nature of the risk”. This is relevant with respect to the reinsurance pool covering “storm surge” as well as where freshwater flooding may be exacerbated by high tides during the declared event (s 8C and regulations). A surge will be generated by actions from the sea and lead to ingress of salt water (mixed with fresh in places). If under s 8A there is a requirement for insurers to maintain contracts with the Corporation, it is highly likely that few if any will allow policies that cover such a liability. Clearly this needs to be discussed with the industry. It is further an issue when a storm surge involves destruction of foreshore properties where the surge is driven onshore by wave action. My case study for this is Hurricane Sandy in New Jersey in 2012 where properties were damaged by cyclone-related surge effects through inundation, physical property destruction even displacement, wave erosion and even fire due to electrical shorts (noted in my June submission). Consideration should be given to removing storm surge from the draft bill at this stage and have a regulation that offers flexibility to add a related cyclone activity at a later stage. To avoid confusion by the inclusion of a hazard linked directly to “actions of the sea”, and thereby maintain focus on hazards that should be more acceptable to insurers, I **recommend** deletion of s 8C (b) (ii).
4. The broadening of the geographic area and the more general definition of cyclone is quite sound. This offers the flexibility that are to be exercised through the regulations subject to disallowance. The need to receive advice from BoM is critical as noted in the draft bill. Keeping flexible where cyclones may impact is also a good step especially given recent points made in the Reserve Bank paper. There is no point in having an artificial line for application of the scheme. However, it still raises the question of what is a cyclone. I note

comments made in Explanatory Materials 1.29 on use of regulation powers that allow for timely adjustment and adaptation to any changes in BoM definitions. The definition in the draft regulation 3A (2) makes sense to me to apply to both tropical and extra-tropical cyclones (east coast lows) which overlap in areas of impact even within the same year (e.g. 1974). They both are stimulated by warm waters. BoM has undertaken research on the extra-tropical extreme events which I personally have been monitoring since the early 1970s. The note attached to 3A mentions tropical cyclones; it could also mention extra-tropical cyclones as well subject to discussion with BoM.

5. I continue to express concern over the possibility that the ARPC and reviewing actuary must consider discounts to maintain incentives for risk reduction and encourage cyclone and flood related mitigation over time (Exp. Matter 1.58). This is fine in principle but potentially very damaging unless managed as part of a regional or local authorities coastal and flood management plan. Here is where a litany of maladaptive actions could be undertaken if not carefully considered through adaptation planning which these entities should undertake. ICA in calling for government investment in adaptation sees the need for a coordinated approach to mitigating risk. I strongly **recommend** that there be further comments to 1.58 that requires APRC to consider other government initiatives before agreeing to any discounts.

Bruce Thom



## ICA REPORT: CLIMATE CHANGE IMPACT “ACTIONS OF THE SEA” AND FUTURE RISKS

On 17 November, the **Insurance Council of Australia** (ICA) released a report in their Climate Change Impact Series on “actions of the sea”. A highlight was the statement that the ICA estimates Australian governments will need to invest \$30 billion in large scale coastal protection and adaptation projects over the next 50 years as climate change makes coastal communities, properties, and infrastructure increasingly vulnerable. Over this time period the ICA foresees that “*a growing number of exposed properties in Australia will become uninhabitable*”. This is an important statement from the body representing Australian insurers and was written in association with an engineering consulting firm, Baird Australia. The report covers a range of issues with recommendations for federal and state governments on scale and funding of mitigation actions to address risks (“it’s not all about engineered defences”); the need for a national assessment and register of risk; and the importance of consistent and risk-based land planning and engineering design standards.

The key outcomes of the report are presented as four “top takeaways”:

- Climate change is driving rising sea levels and exacerbating coastal hazards known as “Actions of the Sea” such as coastal inundation, erosion, and recession.
- Significant additional investment will be required to mitigate the risks of coastal inundation and sea level rise.
- Urgent action is needed at all levels of government, in collaboration with industry, to build a national picture of coastal hazard risks and how to address it.
- The insurance industry stands ready to collaborate with government to share our risk intelligence to help mitigate these growing challenges.

[https://insurancecouncil.com.au/wp-content/uploads/2021/11/2021Oct\\_Actions-of-the-sea\\_Final.pdf](https://insurancecouncil.com.au/wp-content/uploads/2021/11/2021Oct_Actions-of-the-sea_Final.pdf)

The report states that “Actions of the Sea” in the context of the insurance industry “*represent a protection gap, where insurance cover has limited availability due to the inevitable nature of the risk to exposed properties. The insurance industry seeks to reduce this protection gap by raising awareness and advocating for risk mitigation and adaptation with communities and governments*” (p.4). They also note that it is not standard practice for insurers to offer cover for Actions of the Sea globally. In the words of Andrew Hall the CEO of ICA: “Insurers are generally not able to cover ‘actions of the sea’ because of the nature of the risk”.

ICA takes a welcome national perspective of the consequences of so much property and infrastructure being exposed to “Actions of the Sea” now and into a future characterised by sea level rise. Much is at stake for this industry and this report reveals to varying degrees an awareness of issues facing the industry, governments, communities, and landowners in coastal impact zones. But in digesting the details one can only express disappointment at how much more could be said. This is not the place for a detailed review. I can only hope this is the beginning of the journey for the industry in association with governments, researchers, communities. It needs an alignment with recent work by ACCC, federal Treasury and Reserve Bank for starters as well as a better appreciation of work of other groups missing from the Baird report. Recommendations such as to establish long term funding mechanisms for coastal mitigation priorities through infrastructure bodies (e.g. Infrastructure Australia) to local government frightens me for fear of maladaptation.

The accompanying Baird report looks at “Actions of the Sea” from three perspectives: engineering, land use, and risk awareness of the financial and economic impacts. Six actions of the sea are discussed: tidal inundation (king tides); coastal and estuarine inundation including storm surge;

coastal erosion; shoreline recession; sea level rise; and tsunamis. Sadly no attempt was made to cross link these actions with the seven hazards specified in the NSW Coastal Management Act but now I am getting too picky! Emphasis is placed on lack of information to help industry; one example given was the lack of data on damage from coastal inundation with salty ocean water compared to effects of inundation by freshwater. Here lies an enigma for industry and those who think they may be insured. A possible scenario of inundation from the Harbour and/or the sea along the Corso at Manly exposures many small businesses to saltwater flooding—are they covered? A visit to New Jersey after Hurricane Sandy revealed to me how significant were the impacts of marine overwash. Another scenario is possible at Newcastle where low lying suburbs may be flooded by freshwater from the Hunter River, but what if the levels reached are the result of high tide elevation? Are those properties covered if the cause of damaging inundation could be attributed to action of tides? Interestingly Baird concludes the industry should now prepare a position paper on “Actions of the Sea” and its potential coverage by general insurance. The suggestion is quite remarkable: *“The position paper will need to define the possible inclusion or exclusion of particular actions, for example, the possible inclusion of coastal inundation, but exclusion of coastal erosion and shoreline recession from standard policy terms”*. It is recognised since the Department of Climate Change national first pass report in 2009 (and recent RBA paper) that property inundation exposure is far greater around estuaries than on the open coast to wave forces. I certainly would not be so sanguine in advising insurers on the inclusion of coastal inundation in policies.

The Baird report uses Collaroy-Narrabeen as a case study so much of the focus is on coastal erosion as an action of the sea. Yes, it is high profile example as seen in the cover photo of the collapsed pool. But it is a legacy of property being located historically in what the NSW Coastal Management Act refers to as the “beach fluctuation zone”. I asked Angus Gordon for his thoughts on the Collaroy 2016 case study that was used by Baird to illustrate some of the issues in the ICA report. He is much more familiar than me with this event and its history. Collaroy has suffered significant erosion events, many of which have resulted in greater erosion and damage than in 2016. These documented events occurred in 1920, 1940 (twice), 1967, 1974, 1978 and 2016, with many other smaller events....so how come the 2016 event was rated by Baird as a 1 in 50 to 1 in 60-year event? The question is whether they have properly assessed the ranking of erosion events. Rather they try to construct statistics based on wave heights and water levels when those of us who actually understand coastal processes know that EROSION events result from a range of complex combinations and coincidences of wave height, wave direction, wave period (wave energy flux), storm movement direction, tides, and their coincidence with the wave energy flux times of arrival, and storm surge in terms of wind speed and direction and atmospheric pressure and how these many factors combine at any one time. That is, if you want to rank erosion events then do so by the results, not by trying to set parameters based on some of the above contributors. Clearly a true ranking of the 2016 EROSION event, taking into account the documented history of EROSION at Collaroy was 1 in 20, or slightly more frequent; that is, in proper terms, a 5% probability of occurring each year, not a 2% as Baird indicates. So, the Insurance industry is not well informed by the report other than if they realise that erosion events are complex combinations of factors and hence should be ranked by erosion events, not some desktop analysis of some factors that contribute to the event.

In summary, I view this work by ICA as a start in a much-needed conversation of how this important sector will operate in the future in coastal management. It contains useful ideas, but it appears that the journey under conditions of changing atmospheric and oceanic conditions has just begun.

Bruce Thom

