Institute of Actuaries of Australia

18 July, 2011

Natural Disaster Insurance Review
c/- The Treasury
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PARKES ACT 2600

By email: ndir@treasury.gov.au

Response to Natural Disaster Insurance Review Issues Paper

The Institute is the sole professional body for actuaries in Australia, providing independent, expert and ethical comment on public policy issues where there is uncertainty of future financial outcomes. It represents the interests of over 3,800 members, including more than 2,000 actuaries.

Some of the principles that guide the Institute's inputs into public policy are:

- acceptance of public sector involvement where the market does not meet societal needs;
- the need to take a long-term policy view, with appropriate transitional arrangements;
- ensuring that consequences of risk taking behaviour are borne by the risk taker;
- issues of intergenerational equity; and
- clear and reliable information available for decision-making.

The NDIR Panel released an Issues Paper in June 2011, seeking submissions in response. Attached is the Institute's response. In summary, the Institute believes that in some cases, inappropriate development and/or inadequate information make it difficult for the insurance industry to provide affordable flood cover. The underlying cause of potential flood losses, inappropriate development, needs to be addressed as a national priority.

However, mitigation efforts will take many years to implement. In the interim, we recommend government intervention in the market via some form of insurance pool for high risk properties, which will facilitate government subsidy of premiums for those in high risk areas. That pool can also serve as a mechanism to provide financial incentives for flood mapping and mitigation actions, with the aim of eventual wind up of the pool over 10 or 15 years. A pool also provides a structure to address the chronic problems of non and under-insurance.

The Institute response to the NDIR Issues Paper is divided into three sections. The submission first summarises the Institute's key recommendations, and provides some background to these recommendations. Attachment A provides alternative models for a national insurance pool. Attachment B gives feedback on particular matters raised in the Issues Paper.

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The Institute would be pleased to discuss the issues raised in this submission or to respond to specific questions to assist the NDIR in the course of its work. Please do not hesitate to contact our Chief Executive, Melinda Howes, on (02) 9239 6106 if there is any way we can assist.

Yours sincerely

Barry Rafe
President

Submission to

Natural Disaster Insurance Review

Inquiry into flood insurance and related matters

18 July 2011

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Summary of Key Recommendations

The Issues Paper and much of the discussion following its release have revolved around flood insurance and potential ways of addressing the lack of availability of flood cover in buildings insurance. The Review's terms of reference are wider than just this matter and the Institute's response is aimed at addressing the broader issues as well as flood insurance options.

Short term insurance pool linked to long term mitigation actions

In most cases, the insurance industry meets the requirements of society to align risk taking and loss funding associated with natural disasters. In some cases, particularly for exposure to flood and actions of the sea, inappropriate development and/or inadequate information make it difficult for the insurance industry to provide affordable cover.

The underlying cause of potential loss, inappropriate development, needs to be addressed as a national priority. However, mitigation efforts will take many years to implement. In the interim**, we recommend government intervention in the market in some form of national insurance pool which will facilitate subsidy of premiums for those in high risk areas.** That pool can also serve as a mechanism to provide financial incentives for flood mapping and mitigation actions, with the aim of eventual wind up of the pool over a period of 10 or 15 years. A pool also provides a structure to address the chronic problems of non- and under-insurance. We recommend that the pool cover flood and actions of the sea, with extension to other perils if insurance affordability is an issue.

Any government intervention in the insurance market must be careful not to inadvertently promote risk taking behaviour by dampening the relationship between risk taking and loss funding. A government-sponsored insurance pool has many shortcomings and should only be considered as an interim solution. Attachment A to this report sets out some alternative structures for an insurance pool.

Making exposure transparent

In order to determine the exposure of properties to flood there is a need to develop national flood maps.

The Institute recommends the development of government sponsored national flood mapping which is made widely accessible to all stakeholders, including all levels of government, businesses and consumers.

The Institute also recommends that information provided to consumers be communicated in language that encourages prudent risk interpretation. For example, the quantitative measures of flood frequency may be better described in terms such as low, moderate, high and extreme, the same way that bushfire risk is communicated.

The Institute recommends that to minimise disputes any national flood insurance pool cover water-off-the-ground losses. "Water-off-the-ground" has no regard for the nuances of the way the water came and coincident rainfall.

Government funding options

Catastrophe bonds and similar financial instruments may be an effective funding mechanism for natural disasters. A national insurance pool could use catastrophe bonds to access capital and debt markets. There is also the option of the government issuing catastrophe bonds to provide cover for insurers.

Discussion of Recommendations

Current Insurance Market

The Australian insurance market generally meets societal needs. Premiums are determined to a great extent as a function of risk, enabling insurance costs to be an effective tool to encourage risk management. Any government intervention in the insurance market must be careful not to inadvertently promote risk taking behaviour by dampening the relationship between risk taking and loss funding.

We do not advocate replacing or impairing the insurance industry where it is currently meeting the requirements of society. We do, however, advocate consideration being given to the need for intervention to assist consumers who either cannot afford insurance, or avoid insurance with the expectation that the community will provide compensation for losses.

If society holds the view that it is the responsibility of able individuals to take care of themselves, then insurers should avoid making ex-gratia payments and governments should minimise post-event compensation. The present system of government and charitable funding of disaster losses may not promote equitable outcomes. The level of funding and donations has varied considerably from one disaster to the next. Past examples of government funding of losses may discourage individual responsibility and promote inappropriate risk taking.

There have been moves toward simplifying the definition of "flood" in insurance contracts. Currently, actions of the sea are not covered under standard insurance contracts, and the Review is an opportunity to address this gap. Some climate scientists have anticipated an increase in the frequency and severity of weather events as well as increases in sea levels, which means that losses from natural disasters may increase in the future, exacerbated by demographic changes.

Particular issues facing strata title and small business policies can also be addressed and are discussed in Attachment B to this submission.

Non- and Under-insurance

Non- and under-insurance is a very significant problem and has been observed across a range of natural disasters. Non- and under-insurance can be due to the following factors:

- **Inadequate sum insured** - Insurance solutions need to consider better ways of ensuring that properties have adequate sums insured. Consumers may have difficulty estimating an appropriate sum insured – anecdotal evidence suggests that most under-insurance is not a result of a deliberate decision to reduce the insurance premium. Insurers have an important role in providing consumers with guidance and tools to assist consumers to estimate their appropriate sum insured.

- **Deliberate acceptance of risk** - Consumers may rationally and consciously choose to take on the risk of loss. Coverage of 1 in 100 year flood risks may have material capital implications for an insurer. An individual, on the other hand, may interpret the same information as unlikely to impact them personally and therefore a low risk.

- **Insurance is unavailable or unaffordable -** Where insurance is not available, or an individual cannot afford insurance, society may support communal funding for losses arising from a natural disaster, particularly if some level of government has approved development.

- **Inadequate insurance of contents –** Research suggests that the take up of buildings insurance exceeds 90% of domestic properties, but is much lower for contents insurance. In the event of a natural disaster there are many uninsured people who do not own a dwelling and lose most of their possessions. These people tend to be among the most vulnerable in society and any government support comparatively more effective.

A national flood insurance pool provides a structure to address the chronic problems of non- and under-insurance.

A pool to provide financial incentives for mitigation actions

Inappropriate development means that there are properties in locations which are currently unsustainable, in the sense that full knowledge of the flood risk would have led to different development decisions, or at the least different land, housing and insurance pricing signals. Appropriate mitigation and prevention strategies can eliminate or minimise to an acceptable level many of these risks. Some risks may be beyond any mitigation actions.

Any mitigation efforts will take many years to implement. **In the interim, we recommend government intervention in the market in some form of national insurance pool which provides a mechanism for subsidy of premiums for those in high risk areas.** We recommend that the pool cover flood and actions of the sea, with extension to other perils only if mitigation actions are to be implemented.

A national insurance pool can be constructed to provide financial incentives to encourage flood mapping and mitigation actions, with the aim of eventual wind up of the pool over 10 or 15 years.

It is important to align risk taking with loss funding. Cross-subsidisation of premiums can reduce the incentive for risk mitigation and promote new development in flood prone areas. **A national insurance pool which provides financial incentives for mitigation actions as a primary aim is a mechanism for co-ordinating loss funding and appropriate development decisions. Government should set an objective to reduce the size of any intervention in the insurance market over time as mitigation actions reduce the number of properties at high risk of flood.**

To avoid moral hazard and maintain incentives for risk management and flood mitigation, key stakeholders (homeowners, businesses, councils, governments) need to have a vested interest in outcomes. **The Institute recommends that the extent of any cross subsidisation of premiums should be contingent on local and state councils, and potentially home owners and businesses (i.e. the stakeholders) undertaking (or at least contributing to) adequate risk mitigation.**

It is important that the premiums charged for high risk properties provide an incentive to individuals and communities to implement risk mitigation efforts and not encourage undesirable development. It is an option for government to subsidise premiums charged for high-risk properties directly without a pooling mechanism, but we feel that an alignment of interests is better achieved via a pool mechanism which

has the providing of financial incentives for mitigation actions as a primary objective. A pool also provides a structure to address the chronic problems of non- and under-insurance.

The most straightforward and transparent option for flood is to have a national pool cover water-off-the-ground losses for either declared events or defined perils. "Water-off-the-ground" has no regard for the nuances of the way the water came and coincident rainfall. An event could be declared either by government or an independent body. An issue with providing coverage for declared events only is that those living in low density areas may not receive equitable support.

Mitigation actions

There are many pieces to the puzzle of natural disaster resilience and insurance is only one of them. To remain accessible and affordable, insurance requires the other pieces of the puzzle to play their appropriate role. Ideally, in terms of the order in which the pieces of the puzzle should be considered, insurance should be the last.

All levels of government, homeowners, councils and businesses should consider ways to reduce risks to existing assets as well as limiting growth in exposure to floods and other natural disasters. There is much evidence that effective mitigation efforts will likely be more cost effective in the long term than post-event funding of losses arising from a series of disasters. This is before consideration of the social impacts associated with natural disasters.

Mitigation options include revising future building codes, dams and levies, re-location, renovations to existing buildings and infrastructure, and other actions, the specificity of which the Institute leaves to others. Different mitigation actions apply to existing buildings and new buildings. Clearly, it is simpler to prevent new development than it is to move existing development. Planning regulations and building codes will need to be refined to reflect the mitigation strategy.

Better Information

In order to determine the exposure of properties to flood there is a need to develop national flood maps. **The Institute recommends the development of federal government sponsored national flood mapping which is made widely accessible to all stakeholders.** We are aware of previous federal government actions to promote widely available flood maps, and understand that these prior efforts[1] may provide a cost effective basis for further development.

Outputs from flood maps and flood models will always have some uncertainty associated with the exact level of flood risk, and should be as dynamic as possible, in the sense that changes to topography, infrastructure and land improvements are easily allowed for in the model.

The Institute recommends that information provided to consumers be communicated in language that encourages prudent risk interpretation. For example, the quantitative measures of flood frequency may be better described in terms such as low, moderate, high and extreme, the same way that bushfire risk is communicated.

[1] The Institute has had some discussions with various parties about ANUGA, the open source software developed some years ago by staff from the Australian National University and Geoscience Australia.

The Institute recognises that widely available flood maps could lead to disputes between governments, councils, developers and consumers where new information differs from that relied upon in the past or currently. Nevertheless, we consider that these issues must be faced at some time and ignoring the problem will not make it go away. Such disputes could be managed by the introduction of appropriate transitional arrangements. In fact, the longer the delay to an informed market, the greater the potential extent of disputation.

Government funding options

Catastrophe bonds and similar instruments may be an effective funding mechanism for natural disasters.

Catastrophe bonds allow monies to be raised from the private investment sector, at a certain interest rate, in advance of an event. These funds are then released when a defined catastrophe occurs. The net interest payable, less any recoveries, is the cost of catastrophe bonds.

Following a prescribed catastrophe, a bond's face value falls, possibly to zero, meaning that the money raised by the sale of the bonds does not need to be repaid to the private sector investors, therefore freeing it up for use in catastrophe payments.

Catastrophe bonds works like reinsurance, and allow capital and debt markets to participate directly in insurance profit and losses. Catastrophe experience is often seen as uncorrelated to the substantive part of investment portfolios, and the contingent nature of reinsurance financing (pre-event) and the relative magnitude of potential losses involved can make these instruments attractive investments for capital and debt markets.

Frictional costs and sufficient capacity in the traditional global reinsurance market has meant that the catastrophe bond market has not developed to the magnitude expected by some.

The size and nature of government exposures make catastrophe bonds worthy of further investigation. Such financial instruments may be able to provide a viable source of funding for governments, which have a credit rating allowing them to incur lower costs than the private sector accessing capital and debt markets.

There is also the option for the government to issue catastrophe bonds to insurers. Catastrophe bonds may become relatively more economic if reinsurance rates charged by international reinsurers for Australian disaster risk increase significantly.

Attachment A – Potential Models

A government-sponsored insurance pool has many shortcomings and should only be considered interim solution, as any government intervention in the insurance market may inadvertently promote risk taking behaviour by dampening the relationship between risk taking and loss funding.

Recognising the need for government intervention while long term mitigation measures are being put in place, we recommend that any national insurance pool pool serve as a mechanism to provide financial incentives for flood mapping and mitigation actions, with the aim of eventual wind up of the pool over 10 or 15 years.

Linking any national insurance pool to mitigation actions is key, and there are a number of alternative structures available to facilitate this. A pool also provides a structure to address the chronic problems of non- and under-insurance.

We recommend that the pool cover flood and actions of the sea, with extension to other perils only if mitigation actions are to be implemented.

This attachment gives alternative models for a national insurance pool. We first discuss some key considerations, then summarise the NDIR models.

We then give a skeletal outline showing how a community funded model might be structured, and describe some variants to that basic model.

How should the various models be assessed?

The NDIR Issues Paper proposes two criteria for assessment of flood insurance models:

1. Accessibility;
2. Affordability.

Whilst these criteria are critical to a satisfactory resolution to the flood insurance problem, we also recommend taking account of the following four additional criteria:

3. Equity – are the right people paying?
4. Efficiency – is the solution an efficient use of resources?
5. Mitigation incentives – does the proposed solution leave the relevant stakeholders with an incentive to act in ways which will mitigate risk (by restricting development to areas not at risk of flood and taking steps to mitigate the risk of flood or the potential damage)?
6. Practical viability ("gaming the system") – if subsidies are to be provided to insureds at high risk of flood, will insurers and insureds be able to "game the system" to their advantage, e.g. by misrepresenting the flood versus non-flood component of premium to obtain higher gross premiums for the insurer and lower net premiums to the insured, at the expense of the parties that are subsidising flood-prone properties?

We note that there is inevitable conflict addressing these criteria: there is no ideal solution.

Insurer or Reinsurer?

The NDIR models suggest a pool which operates as an insurer. A national insurance pool may more effectively operate like a reinsurer, where it provides coverage etc. to insurers, and does not require large numbers of claims handling and other staff. If insurers retain some portion of the flood risk, they can settle claims and have an incentive to keep claims costs down.

Premium determination

Most models have the pool determining the flood premium. Some insurers may not be happy about accepting risk (for both the flood risk and the non-flood risk) at rates that have been determined by a third party, and which the insurer may or may not regard as acceptable for the risks underwritten. Insurers should determine the premium for risk they retain.

Full risk rating is not necessary but advisable, as it allows the extent of any subsidies to be determined.

Pool Coverage Considerations

If a national insurance pool is set up, it will be necessary to set out who has coverage, and what events and perils are covered, and any limitations on claim payments.

For flood cover, a national pool could cover water-off-the-ground losses (aka flood and storm water) for either "declared events" or defined perils for properties deemed high risk. "Water-off-the-ground" has no regard for the nuances of the way the water came and coincident rainfall. An event could be declared either by government or an independent body. An issue with providing coverage for declared events only is that those living in low density areas may not receive equitable support.

Cover from the pool could be capped at (say) $300,000, or full replacement cover may apply up to a pre-determined limit. Insurers may have the option of providing top-up cover.

To encourage better development decisions, participation in pool cover could be restricted to houses built or extensively renovated before (say) 2012. Claim payments could be contingent on the funds being used to rebuild in a more resilient way (elsewhere or to higher standard in same location). The pool can possibly cover public, commercial premises and residential units. Home contents cover may or may not be provided.

A possible alternative would be for a national pool to cover certain catastrophic events rather than high risk properties. The pool could provide non-conditional coverage in an event of a certain catastrophic scale, determined based on certain criteria by the government or a body such as Geoscience Australia or the Bureau of Meteorology. Conditional coverage could also be made available for events below the determined catastrophic scale, with consideration of those living in low density areas. With this approach, where the volatility of larger events is transferred to a national pool, insurers are likely to be in a position to offer lower premiums to consumers, which may also help reduce non-insurance.

It would be possible for pool coverage to extend to earthquakes, tropical cyclones, bushfires and related hazards.

NDIR Models

The NDIR models proposed in the Issues Paper share the following features.

1. Insureds would approach insurers for quotations in the usual way. If a quotation can be found in which the "flood inclusive" price is less than a certain threshold (say 150% of the "flood excluded" price) then the insured can take out insurance without the need for cover from the pool.
2. If no quotation is provided where the "flood inclusive" cover is priced at less than the threshold, then the insured will be entitled to a "flood discount". The pool will calculate the rate for both "flood inclusive" and "flood excluded" cover and will also calculate the discount based on a formula such as "90% of the excess of the 'flood included' price over 150% of the 'flood excluded' price". The selected insurer will pay the flood premium (net of the "flood discount") to the pool.
3. Subsidy providers would pay the "flood discount" into the pool.
4. The pool would settle flood claims with insureds in the usual way. Other claims would be settled by insurers.
5. The pool operates as an insurer and would bear flood risk and would need to adopt governance structures, to put appropriate reinsurance management and risk management strategies in place, and so on.

The models proposed in the Issues Paper require significant claims resources to facilitate fast payment of claims in the event of a major flood event. It may be more cost effective to rely on insurers' resources in some way. If insurers are paying claims merely as agents for the pool, there would be need to be incentives to manage and minimise claims costs in place.

Community Funded National Insurance Pool

We set out a generic community funded model, where in this example charges are levied to ratepayers.

1. Charges would be levied on all property owners directly. Charges may only apply to certain dwellings, e.g. exclude units. The charges could replace or extend the current flood levy.

2. Alternatively, rate payers could purchase insurance from private insurers and provide a certificate of currency to local councils when paying rates.

3. Claims can be settled by the owner's normal home insurer, which recovers from the national insurance pool, with the insurer being reimbursed for claims handling costs.

4. Owners without buildings insurance could claim directly off a representative (an insurer or a statutory body) of the pool.

5. Contents cover is not easily allowed for where charges are levied to rate payers. Contents coverage could be provided at a fixed level, possibly extending to contents cover for renters.

There are a number of variations available. For example, a levy could be imposed on all properties via the councils, based on the replacement value of properties.

Councils could be required to conduct an assessment of the replacement value of properties on a regular enough basis (e.g. once every two years). So, if the average replacement value is $280,000, a rate of 0.1% will equate to $280 p.a. There are approximately 9 million risk addresses found in GNAF, and this would imply that the scheme is able to collect at least $2.5b p.a. Alternatively, a levy could be collected based on an existing land value basis that each council is using.

We now set out some variants to components of this basic model.

Variable Quota Share Model

There are a number of ways of determining how premiums and losses are shared between insurers and a national insurance pool. A fixed dollar threshold or fixed percentage of losses can be applied. Alternatively, a variable quota share model[2] has the flood risk shared between the insurer and the pool in differing proportions. For properties subject to high flood risk, the flood pool underwrites the great majority of the flood risk, but for lower risk properties, the insurers bear most or all of the risk.

With this approach, the insurers will keep relatively more of the flood risk for properties where the flood risk is least, which may be a relatively attractive feature of the scheme for insurers. With the variable quota share model, the insured's premium is retained by the insurer, with the government directly paying the pool's portion.

Market Model with Subsidies

It is possible to subsidise premiums directly without setting up a national pool. This model reflects the current insurance market, with the exception that subsidies would be provided to those who are at elevated levels of flood risk. The following are possible design features:

1. Insureds would approach insurers for quotations in the usual way.
2. Insurers would quote both "flood inclusive" and "flood excluded" premiums. There may be an agreed formula for determining a "flood discount". For example, the "flood discount" might be 90% of the excess of the "flood inclusive" rate over 150% of the "flood excluded" rate, with both rates as calculated by the insurer.
3. Insureds would choose with which insurer they wanted to place their business.
4. Insureds would pay the insurer premiums net of flood discount. The flood discount would be collected separately by insurers from the subsidy providers (governments or councils or insurers, as per the NDIR Issues Paper) via a purely administrative mechanism. There would be no "flood pool" apart from the flood discount collection mechanism.
5. Insurers would settle claims with insureds in the usual way.

In summary, this model constructs a normal competitive market except that the subsidy providers would support those who are deemed eligible for discounts. The premium payment mechanism would be akin to CTP insurance in NSW and Queensland.

[2] More details are available at http://www.finity.com.au/wp-content/uploads/2011/06/df_Flood_Jun-2011_FINAL_Secured.pdf

Historical Reference

Another model which could be considered is similar to the scheme proposed by the Natural Disaster Insurance Scheme Working Party following Cyclone Tracy.

The following are possible design features:

1. A co-operative arrangement between insurers and government:
    a. A pool of insurers would be established to operate the scheme;
    b. The government would offer reinsurance to the pool.
2. The scheme covers buildings and possibly also contents losses from earthquakes, floods, tropical cyclones, bushfires and related hazards. Some of the cover currently provided by insurers would be provided by the scheme.
3. The scheme would only cover "declared events". Only events of a certain catastrophic scale would be considered declared events. Guidelines would be established and the events declared by an independent body.
4. For declared events, the cover will be the same for all insureds (e.g. full replacement cover may apply up to a pre-determined limit).
5. Participation would be compulsory.
6. The pool would be managed along traditional insurance principles. Premiums may be collected with council rates.
7. Premiums would be risk rated, possibly with some level of cross subsidisation for high risk properties. The level of cross subsidisation may vary for new properties built in high risk areas after the commencement of the scheme.
8. Premiums would be set by a Premiums Advisory Committee and would be the same for all insurers participating in the pool. Premiums would be intended to generate a profit for insurers.
9. Special arrangements could be apply to those who, subject to a means test, could not afford to take out cover.

Attachment B – Response to the Issues Paper

This attachment responds to specific parts of the Issues Paper. We have responded to those parts of the Issues Paper where the Institute has particular views or comments.

Numbers and headings in this attachment reflect numbering and headings in the Issues Paper. Any undefined term has the meaning defined in the Issues Paper.

Chapter 2. Home Insurance Cover for Flood

We set out below some matters for consideration in response to the proposed alternatives given in the Issues Paper. The issues raised are not necessarily unique to the proposed alternatives.

Automatic Cover and the Opt Out Alternative

We have a range of comments in relation to the alternatives provided in the Issues Paper that are common to both the automatic cover and the opt-out options:

- Not all damage that occurs at the same time as a flood is clearly from an overflowing watercourse. Many floods occur during a period of prolonged rainfall, often accompanied by strong winds. It would be useful to clarify how the causes of claims will be determined when there is a mixed event.
- The level of cross-subsidies will impact the extent of insurance take up and the viability of proposed options. With any increase in premiums, albeit subsidised, there is potential that there will be a reduction in the take up of home insurance.
- The need to offer flood cover will require insurers to be able to assess an appropriate risk premium. This will result in considerable expense to insurers, including the need to develop IT systems. The increased costs could result in some, particularly smaller, insurers exiting the market or "red zoning" flood prone areas.
- The introduction of a pool could leave insurers without incentive to manage efficiently the cost of claims that are covered by the pool. This could see claims costs for the pool being higher than would be the case if insurers were impacted by the cost of the claims. It would be optimal for insurers to have a financial incentive to effectively manage the cost of claims.

There are some issues that are specific to the opt out alternative:

- It may be difficult for consumers to make an informed decision whether or not to opt out. The opt out option is aided if information provided to consumers is communicated in language which facilitates prudent risk interpretation. This may be via describing risks in terms such as low, moderate, high and extreme – the same way that bushfire risk is communicated.
- The opt out solution does not resolve the recent experience of financial and emotional distress for many customers because of the mixed event dispute problem. Disputed claims will still occur at a significant rate under the opt out alternative, especially amongst consumers who are unaware of, or unable to, adequately assess their own flood risk, and amongst those on low incomes.
- The take up of the opt out alternative would be expected to be biased toward those customers of genuinely very low risk (because the premium will be very low) and those customers of extremely high risk (due to the subsidised premium).

- Providing consumers a choice to opt in or out of flood insurance means that the pool and insurers may be selected against, at least in the medium term until information about the elevation of and location of improvements on the land parcel is widely accessible. This is expected because sometimes local knowledge will be better than model projections. Anti-selection will occur due to the inadequacies of the terrain/elevation models (DTMs) used as inputs to the flood models. This arises in two main ways. The DTMs used as inputs into the flood models are of varying vertical resolutions. A small measurement error (e.g. +/- 3m) could have a very large impact on the flood risk assigned to the property. Secondly, the DTMs do not provide an indication of where on the land parcel the property actually is.

Chapters 3 and 4. Identifying the Homes with High Flood Risk; An Insurance System for Homes with High Flood Risk

The Institute's comments in relation to Chapters 3 and 4 of the Issues Paper somewhat overlap and have been combined.

Affordability framework

The proposal in the Issues Paper of using non-flood premium as the benchmark to measure affordability may be workable, but it assumes that:

- The private market is efficient and charges the same level of premiums for the same risks and coverage,
- Each consumer currently takes up buildings and contents insurance,
- Each insurer provide insurance cover for all policyholders,
- The same coverage is offered for all policies, and
- All consumers take out policies that provide an appropriate sum insured.

In practice, none of these assumptions hold. Specifically:

- Premium levels can vary substantially between insurers for the same risk and coverage.
- As noted below, the level of take up of insurance varies.
- Not all insurers will provide access to insurance in all areas (e.g. a number of insurers do not offer cover north of Rockhampton), nor will they offer insurance to all potential customers.
- Coverage, including excesses, varies significantly between policies and between insurers.
- As illustrated by the Victorian, fires there are significant levels of underinsurance for most buildings and contents policies.

Some of these drawbacks, particularly the extent of non- or under-insurance, make the suggested approach difficult to apply in practice. The current level of non- and under-insurance bring into question whether the non-flood premiums currently offered in the market are truly affordable.

Paragraph 3.2 of the Issues Paper states "There is evidence of a high level of home insurance coverage, implying that such cover is affordable."[3] However, this appears to contradict:

(i) Mike Wilkins' noted in his April 2011 address to CEDA that almost two million (around 20%) homes were thought to not having any insurance cover;

(ii) ASIC 2005 report on "Getting home insurance right" suggests that the proportion of uninsured homes ranges from 2% to more than 15%.

It seems likely that insurance is deemed unaffordable by many low income earners, which is supported by the relatively high level of non-insurance observed in the 2009 Victorian bushfires.

Supposing Paragraph 3.2 is correct, i.e. the level of non-insurance is low, then there is still the issue of under-insurance, which remains significant in Australia. There are probably a range of reasons that result in under-insurance including:

- Consumers do not appreciate the value of their building and contents; and
- Consumers find insurance covers to be expensive and deliberately underinsure to help contain the cost.

The alternative affordability concept raised in the Issues Paper, which considers a benchmark of income or assets, is possibly more equitable, albeit more difficult to determine. Non-insurance and under-insurance are discussed below in our response to chapters 11 and 12.

Engineering Threshold or Price Threshold

The Issues Paper identifies two potential bases for determining the threshold for high risk properties: an engineering threshold and a pricing threshold. We observe that the two approaches may not be that distinct, since insurance premiums are determined by reference to engineering and other physical analysis.

We note that the premiums which are used in the pricing threshold may also include market and other components which may not reflect the relative risk among properties.

The aim of a threshold is to distinguish properties with high flood risk. A pricing threshold may instead distinguish those properties high flood risk relative to risk associated with other perils.

For example, consider two buildings A and B valued at $200,000, each with a 1 in 100 year flood exposure. Both buildings have the same flood risk exposure, and ideally the same flood premium, say$2,000.

For many reasons, building A could be exposed to greater non-flood risks than building B, and have a higher non-flood premium. For illustration, assume building A has a non-flood premium of $1,000, and building B $500.

[3] Paragraph 11.2 later makes reference to the proportion of owner-occupied homes with no insurance being estimated at 4%.

A pricing threshold will assess building B to have higher flood risk because of the relativities of the flood and non-flood premiums, both buildings are exposed to similar flood risk.

Notwithstanding these issues, a pricing threshold may be more viable in the short term in the absence of comprehensive, reliable and publicly available flood maps.

Pooling

We do not consider that the provision of affordable flood insurance for high risk properties provides a suitable long term solution; i.e., longer than 10 or 15 years.

The Institute supports the view that it is not the role of policy makers to make insurance cheaper for these individuals, but rather it is to make use of the knowledge we have about these properties to find a way of reducing the risk of this event happening to them at all. Only after exhausting all risk reducing possibilities or as a short-term solution does it make sense to devise a way of making insurance more affordable.

It is often argued that the cost of mitigation is prohibitive. This may be the case over a short term financial assessment but will not be the case when considered over the longer term and when the full economic cost is considered, including government subsidies as well as the non-financial costs such as emotional distress.

The Cost of Pooling

The Issues Paper proposes a pooling mechanism which relies on the pool calculating the flood and non-flood peril premiums in order to calculate the premium discount.

The Institute notes that such a process would involve considerable expense and it may be more efficient to utilise the resources of insurers.

Discount Eligibility

Some level of discount to existing properties in flood prone regions to ensure affordability may an appropriate short term option. Assuming that home owners with higher-valued properties are in a stronger financial position and should be well-placed to cope with higher flood premiums, it may be appropriate for the level of discount to reduce with the value of the property; i.e., the higher the value of the home, the lower the discount. Lower discounts could act as an incentive for higher-valued properties to put in place mitigation actions.

Appropriate development standards may be encouraged by allowing discounts only when adequate risk mitigation strategies are put in place. The level of discount for properties developed after a specified date (perhaps the date when national flood map information is expected to become available, so that all parties have full transparency over the level of flood risk) should either not be offered at all, or at least should be commensurate with the level of risk mitigation effort implemented.

For existing properties, discounts may be provided either for a limited time or on a reducing scale (where mitigation actions can reasonably be expected to be implemented).

In both cases, premium discounts are not adequate long term solutions.

Chapter 5. Flood Cover for Contents Insurance

It is the Institute's view that the impact of floods and the affordability of contents insurance should be addressed for low income individuals as part of any insurance solution to the flood issue.

In the case of owner occupied buildings, the inclusion of contents insurance is relatively straightforward. The key difficulty for the inclusion of contents insurance is the fact that many properties are not owner occupied and the take up rate for contents insurance amongst non-owner occupied properties is considerably lower than that for owner occupied properties.

Chapter 6. Flood Cover for Strata Title and Other Residential Property

The Institute recommends that strata title and other non-standard residential properties be included as part of any solution developed for flood. The paragraphs below elaborate on this issue.

a. Strata title should be included

i. There are a large number of laterally structured strata properties in Australia where properties are physically similar to a standard home. It will prove difficult to explain to the public why these strata properties are excluded from the flood arrangements.

ii. There is a growing trend towards the development of apartment blocks in Australia.

iii. The flood risk for apartments may be lower as the risk of inundation would only affect the lower levels of the building. Hence, the accumulation risk in the event of a flood is likely to be lower for apartments relative to that of standard homes.

iv. Offsetting this, planning processes often result in concentrations of apartment blocks, often in high risk locations. This could result in accumulations of risk and insurers may decide to withdraw from the market in those areas.

v. To help reduce the risk of flood damage to the fixtures of strata properties, regulations should be modified so that expensive fixtures (e.g. lift motors and controls, ventilation systems, alarm systems and sprinkler pumps) are located above a specified flood level (instead of the basements) or "water-resilient" based on some stipulated standards (we note that Brisbane City Council is currently addressing some of these issues).

vi. If strata title is covered for flood, it would be necessary for the owners' corporation to allocate the premium charged to each apartment.

vii. In all but a few exceptions, legislation requires the owners' corporation to purchase building insurance. Unlike home owners, the owners' corporation would not be able to avoid flood cover and the associated cost by deciding not to insure.

b. Mixed use strata properties should only be included if the floor area of the building for commercial activities is below a certain limit/threshold

i. As noted in the Issues Paper, the nature of the cover is essentially commercial insurance and the strata property manager should be able to seek flood cover via insurance brokers.

ii. However, there will be properties where the amount of floor area committed for commercial purposes is not significant, e.g. only a grocery store located on ground flood of a building. In such instances, these properties should be treated like an ordinary strata property and be included in the flood arrangements.

iii. Otherwise, it is the Institute's view that larger mixed strata properties should be excluded.

c. Retirement villages and aged care facilities should have limited coverage

i. Whilst such residences may be in some respects similar to a standard home, these properties may house a range of expensive medical equipment and supplies.

ii. It is the Institute's view that coverage for such items is most efficiently provided by the private insurance market. This contains costs for any national pool, and may restrict building such properties in flood prone areas.

d. Caravans and mobile homes should be included

i. The Institute believes that these properties should be included on the basis that the caravan or mobile home may be the only asset the insured owns.

ii. However, many caravan sites are located in high-risk areas, a total loss is likely given the construction type, and there is a risk of moral hazard.

Chapter 7. Flood Cover for Small Business Insurance

The Institute is of the opinion that small and medium sized businesses (SMEs) should also be included in any flood arrangements because:

1) Similar to households, SMEs do not adequately understand their insurance needs and are therefore more at risk of under-insuring or not insuring at all.

2) SMEs may need better advice on flood and insurance generally. In a 2008 report for the Insurance Council of Australia it was noted that there was a mismatch between the perceived applicability of the various cover types with the claims experience. The failing of SMEs as a result of a flood event (or any insurance event) can have a flow-on impact to the economy. Both the livelihoods of the business owner and their employees (and potentially other businesses or suppliers) will be significantly impacted.

The Institute suggests that any proposed flood cover should be offered only if business owners have private business insurance and the sum insured nominated is above a certain threshold of the value of their business, where that value is determined in a straightforward and transparent way.

Many SMEs are renters of properties and it is the contents which should be covered to the extent possible.

A key issue for the insurance of SMEs is the take-up and extent coverage of business interruption insurance. In terms of a general flood pool, the Institute is of the opinion that business interruption as a result of flood should be excluded. The Institute considers that the issue of under- and non-insurance in relation to business interruption by SMEs should be addressed separately to any pooling arrangements proposed for domestic properties.

Natural Disasters Other Than Flood

For most natural disasters insurance cover is readily available, largely because other peril events are more random than flood, particularly for the very high flood risk pool.

The level of public funding via governments and donations for an insurable event such as the Victorian bushfires in February 2009 was considerable. The fact that such a large proportion of residents had no or insufficient insurance needs to be addressed if the NDIR and the federal government is to achieve desired outcomes.

There are conflicting reports on the level of under- and non-insurance in Australia, but clearly there is a correlation between insufficient insurance and the low income population. It is not clear that private sector insurers are in a position to address this issue.

Chapter 9. Measuring Flood Risk

The Institute believes that a government-sponsored flood mapping initiative would support the development of better risk pricing, accumulation management, and risk transfer mechanisms for flood risk.

A national insurance pool or other arrangement may also be facilitated by the availability of comprehensive and unified flood mapping, as risk can be transferred to capital markets or reinsurers who currently cannot support the flood peril because of the lack of information of potential exposure.

The EQC in New Zealand (pool model) or the UK system (market model) both rely on comprehensive mapping of exposure to covered risks.

Single Standard National Flood Mapping

The Institute supports the development of a single national standard for flood mapping in Australia that would help support the development of better risk pricing, accumulation management, and risk transfer mechanisms for flood risk.

The benefits of comprehensive flood mapping are optimised if a single national standard is developed. Having multiple digital terrain models (DTMs) developed from various sources is likely to create confusion and potentially result in inconsistent understanding of flood risk amongst different parties and may engender disputes.

If insurers are required to offer flood cover, having standard flood mapping information will enable greater confidence in monitoring and maintaining the solvency of the insurance industry. If every insurer was to establish its own flood mapping capability, there is greater risk of insurers (especially the smaller ones) misjudging the level of risk accepted, leading to the purchasing of inadequate reinsurance protection which, in turn, may have a significant impact on their solvency positions.

In relation to the question of developing and funding comprehensive flood mapping, the Institute considers that:

(i) The federal government is best placed to take the lead in co-ordinating and establishing a single national standard approach to flood mapping.

(ii) A body with appropriate expertise in hazard risk and geo-spatial capabilities should be assigned the task of producing and maintaining all flood maps across Australia[4].

(iii) All parties identified as stakeholders in the management of flood risk, including federal and state government, local councils, insurers, the construction industry and, to some extent, lending institutions, should contribute to the cost or their use of establishing and maintaining the flood mapping capability.

Can insurers provide cover without comprehensive flood mapping?

Whilst paragraph 9.21 of the Issues Paper describes some of the problems with the current flood mapping information available, paragraphs 9.20, 9.22, 9.23 and 9.24 appear to suggest that these limitations or inadequacies with current flood information may not be an impediment to the insurance market providing cover.

Current inadequacies of flood mapping may seriously impede insurers being able to offer cover at all, if cover automatically includes flood cover. Making flood cover automatic changes the dynamics of the market and exacerbates the issues of inadequate flood mapping. Insurers will lose the ability to deny coverage for unmapped properties and will be subject to potential loss accumulations that they will not be able to monitor. This may have ramifications for the price of reinsurance.

Smaller and medium sized insurers will be most affected. For these insurers, the cost of filling in the gaps for unmapped areas is proportionately much larger. The larger insurers will have a significant competitive advantage in acquiring better data and developing alternative and robust flood models. Small insurers may exit the market.

Measuring flood risk is difficult

There are many uncertainties regarding the output from a flood study, even when conducted by a highly skilled practitioner. A separate issue is the range in quality of different flood studies.

To provide a picture of the sources of uncertainty and their magnitude we provide a description of the basic components of a flood study:

1. A model of rainfall events is the starting point. This requires measurement of rainfall intensity and duration across Australia. This is complicated by the limited number of data collection points, a considerable amount of missing data, and the need to predict rainfall events with a frequency that is uncommon relative to the volume of data available.
2. A terrain model is required to help predict the flow of water on the ground of the catchment into the river system and surrounding terrain.
3. From points 1 and 2, a hydrologic model is developed to translate the rainfall event to a description of water flow. Usually historical watercourse gauge data and rainfall gauge data are used to develop the relationship between rainfall and river flow. This relationship is then used to help calibrate the river water flow predicted from the design rainfall event and the hydrologic model. However, the watercourse gauge data are notoriously unreliable. Further,

[4] A possible candidate is Geoscience Australia (GA) which has produced a number of publications on flood and developed ANUGA. In addition, if the flood maps are used in conjunction with its national-wide property exposure database (known as NEXIS), GA is well positioned to help promote greater and improved understanding of flood risk across Australia.

historical rainfall may not include a 1 in 100 year event, so extrapolation may be needed to apply this relationship to the design rainfall in point 1, increasing the uncertainty.

4. A hydraulic model is then needed to predict water flow in the watercourse. This will depend on the characteristics of the river such as the topography of the underwater surface, depth, and width of the river. Gathering this information is very difficult to obtain for a whole river system, so a range of modelling assumptions is required.
5. A terrain model is then used as an input to a hydrologic model to predict the flow of water over the ground after it leaves the watercourse. The currency and resolution of the terrain model will impact the output flow of water, meaning that the flow of water over land after a flood occurs can be quite uncertain.
6. When the flood output is applied to individual addresses, there is also uncertainty about where exactly the property is located on the land parcel.

Finally, damage to property and infrastructure is determined as a function of flood depth. There is considerable variation in the relationship between depth and damage from river system to river system, because this will depend upon the velocity of flood waters and the duration that the property is underwater.

In summary, there is a lot of uncertainty around flood modelling, significant data gaps, and no easy way to turn model output into premium rates.

Chapter 10. Risk Mitigation and Insurance

The relationship between the availability and affordability of insurance and the impact of risk mitigation efforts remains unclear.

There is a widespread economic and social cost of natural disasters. Natural disasters can affect large parts of the Australian economy – operation of mines, operation of ports, the ability to transport goods, lost agriculture production, the inability for people to get to work due to damage to roads or public transport, possible undesirable inflationary effects (e.g. demand surge of certain types of labour and materials, "cost of bananas") etc. Natural disasters cause physical damage to infrastructure assets, some of which may not insured, but also cause large economic costs due to the disruption of a normal functioning economy.

Given this broad impact, the community may find it acceptable for the cost of risk reduction measures to be spread across the whole of society. That is, society may accept as reasonable federal and state governments contributing a significant proportion of natural disaster loss costs.

However, effective risk management requires that those who make decisions which impact loss costs bear a portion of any costs. It is not appropriate for local councils and individuals to take on risk and expect a higher level of government to fund any losses that arise.

Insurers may have difficulty passing on the benefits of risk mitigation to their customers due to lack of access to relevant information. There are broadly three types of information required:

(i) Property-specific mitigation measures – these are mitigation efforts carried out by the home owners themselves e.g. upgrading homes to meet a current or revised building code, lifting buildings higher in flood plains and reinforcing home features such as garage doors, window and door panels;

(ii) Government-initiated mitigation measures – e.g. constructing levee banks, sea walls, barrages for unusual tides, fire breaks, improved drainage and dams;

(iii) Government planning and building rules.

Having to collect this information is likely to significantly increase the underwriting cost for insurers. On the other hand, this information (both property-specific and government-initiated) should be readily available within local councils[5].

It is important for both government and the insurance industry to collaborate to ensure that this information is made available and all parties are fully aware of the expected benefits of various types of risk mitigation measures so that these benefits are subsequently passed on to those who invest in such measures.

Chapters 11 and 12. Non-insurance of Homes: Should Home Insurance be Compulsory; Under-insurance of Homes

There have been many investigations into non-insurance and under-insurance in the wake of natural disasters in Australia. Although private insurance is currently available for most non-flood perils, many people, particularly those on low income, are left exposed to losses. Sometimes financial relief is available for the under- and non-insured, often in the form of government assistance or charitable donations.

There are a number of reasons for non-insurance and under-insurance. One of the major reasons, particularly for those on lower incomes, is the affordability of insurance, which is discussed above in our response to chapters 3 and 4. Additional imposts such as stamp duty and fire services levy make premiums more expensive and further contribute to under-insurance. For example, in NSW, statutory charges including GST add more than 40% to buildings premiums.

One solution to the issue of non-insurance included in the discussion paper is making home insurance compulsory. A main advantage of making home insurance compulsory is that if all buildings are covered, there will be significantly lower reliance on handouts from governments and charitable donations following natural disasters. This would lead to more consistent coverage between home owners, and would enable communities to recover more quickly from disasters.

However, compulsion is a measure exercised sparingly in society. Currently in Australia the only forms of compulsory general insurance is to cover injury or damage to third parties (i.e. not injury or damage to the insured). There will likely be resistance from those people who made prudent building decisions if they are asked to pay increased premiums or fund losses arising for those who knowingly took on risks.

[5] All home upgrades or renovations are likely to require approval from local councils.

Compulsion impinges on our freedom of choice as to how we spend our income, mandates insurance as the only loss funding tool, and would require a significant change to the way property insurance currently works and is regulated.

Alternatives to compulsion are available which may have a similar impact. To the extent that premium levels do increase the rate of non-insurance, reducing the impact of stamp duty and other imposts may increase take up rates, particularly in NSW. It may also be possible to target initiatives such as subsidised premiums at those who are not insuring, particularly low income earners.

Raising awareness of the need for individuals to take responsibility for their own insurance coverage may both increase the take up of insurance and lessen the tendency to expect government or chartable handout after a loss.

Lending institutions, which have a vested interest in people having appropriate insurance in place, may be able to play some role in increasing insurance coverage. The role of lending institutions is discussed below in our response to chapter 14.

Under-insurance is a more widespread issue than non-insurance. A report by the Australian Securities and Investments Commission following the 2003 Canberra Bushfires estimated that between 27% and 81% of Australian households were under-insured by 10% or more against rebuilding costs.

The three types of cover discussed in the Issues Paper, are:

1. Sum insured;
2. Sum insured plus top up;
3. Replacement cover.

Replacement cover and sum insured plus top up will lead to lower levels of under-insurance than the traditional sum insured cover, and higher premiums.

We offer the following comments on the advantages and disadvantages of sum insured plus top up cover:

Advantages:

- Homeowners are free to choose their level of cover, with the top up providing a buffer.
- Compared to replacement cover, it should be easier to determine a cash settlement amount in the event of a total loss.

Disadvantages:

- Homeowners are free to choose their level of cover, which still may not be enough even with the top up.
- Risk of under-insurance remains with the insured. Determining the sum insured is a difficult task.

We offer the following comments on the advantages and disadvantages of replacement cover:

Advantages:

- In theory should eliminate under-insurance.
- From a householder's point of view, most of the risk of undervaluing the property lies with the insurer.

Disadvantages:

- Can lead to issues with determining cash settlements in the event of a total loss.
- Changing cover from sum insured to replacement cover will increase in premiums compared to current levels.

Chapter 13. Non-insurance and Under-insurance of Contents

The issues in relation to under-insurance of contents are similar to those discussed in relation to Chapters 11 and 12. These issues are particularly relevant for low income tenants as their contents may be the main assets that they have, and any loss of contents is a much more significant financial burden than for homeowners.

It is the Institute's view that consideration should be given to the reasons for non-insurance and under-insurance of contents for low income tenants, and premium subsidies and alternative payment options (e.g. paying premiums with rent) or policy changes be considered.

Chapter 14. The Role of Lending Institutions

Given the high proportion of homes with mortgages in Australia, it is possible that lending institutions could be utilised to improve various aspects of home insurance. Some suggestions are:

1. *Ensure all borrowers have adequate building insurance on an on-going basis*
   - Most (if not all) lending institutions currently require borrowers to purchase full buildings insurance, at times engaging property surveyors to the site to estimate the replacement value of the building when the loan is taken out. This acts to reduce the level of underinsurance amongst mortgagees. It may be prudent for lending institutions to ensure this requirement is policed on an on-going basis for loans above a certain level or below a certain age.

2. *Ensure responsible new property development*
   - For new properties, it is common practice for potential home owners to seek full and unconditional home loan approval from the lending institution before any building construction commences.
   - If flood data information is made available publicly, as well as aiding prudent development decisions by councils, lending institutions could use this information to help deter new developments in flood prone regions by rejecting such home loan applications. Devaluation of existing properties may also occur.

Introducing these actions would most likely result in increased administration costs for lending institutions and increases in home loan lending rates. The positive impact would be greater resilience and less risk of property devaluation, once legacy issues have been addressed.

Chapter 15. Consumer Awareness of Risk and Insurance

Measures such as issuing a single page key facts statement and adopting a standard flood definition will help increase the level of awareness of exposure to perils. Efforts to increase awareness of personal responsibility for insurance will increase insurance take up rates and reduce expectation of government or charitable handouts in the event of a loss.

The non-tangible nature of insurance can make it difficult for different parties to interpret and respond to the same circumstances in a consistent manner. What consumers understand or perceive risk to be can be quite different to the perspective of insurers and local councils.

Insurers and local councils consider a wide range of event return periods e.g. 1 in 1,000, 1 in 250, 1 in 100 etc. As a general rule, individuals do not assess such risks on such scale. For an insurer, a 1 in 20 year event (for flood) is extremely risky. For an individual, this is likely to be longer than their expected dwelling duration at that location.

Consumers place greater emphasis on short term financial implications. For a property that has a 1 in 20 year risk of flood, one may have lived in this property for 20 years and not have experienced any flood. This is likely to have occurred in the recent Brisbane floods where residents have lived through a long period of low rainfall, have lived in their house for 10-20 years and the risk of flood hardly even enters their mind. When given a choice, many are likely to decide not to insure their risk.

Consumers are likely to take for granted that mitigation measures implemented by the government are sound and reliable. The example of the Wivenhoe Dam in the February 2011 Queensland floods demonstrates that there is still significant risk of events happening with unintended consequences. Whilst insurers are likely to think about such possibilities, most consumers would not and in most circumstances, would be find it difficult to assess (or even understand) such risk.

Chapter 18. Funding Public Infrastructure

Item 9 of the Review's Terms of Reference states that:

> "The Review will also consider whether the existing Commonwealth and State arrangements for dealing with natural disaster recovery and resilience should be supplemented by the establishment of a national disaster fund to support the rebuilding of public infrastructure in the aftermath of events such as the recent floods."

Australia has a lower cost of capital than private sector insurers, and the ability to spread and diversify risk, including inter-temporally. In addition, the size of the economy allows the country to withstand the cost to public infrastructure of even relatively large natural disaster events such as those recently experienced. Prima facie, this suggest that it may not be economically optimal for Australia to incur the

costs of private sector insurance, which are generally greater than expected costs, but instead to rely primarily on its own resources to fund the cost of natural disasters.

The Issues Paper briefly discusses the issues of pre-funding and the National Disaster Relief and Recovery Arrangements (NDRRA). There are arguments for and against both pre- and post-funded arrangements, and we note that an allocation of (expected) costs to the time (and taxpayers) where the risk is borne can be viewed as being equitable.

In relation to the NDRRA, the Institute makes no comment on their detail. We do note, however, that the underlying principle of the Commonwealth supporting the states' exposure to the volatile costs of natural disasters is sound. While the arrangements were amended following recent events, we believe that tests of cost effectiveness are important and in the public interest. As stated, it is likely that the most cost effective solution for the Australian people is for their governments to rely primarily on their own resources to fund the costs of natural disasters.

We are available for further discussion on funding public infrastructure and the NDRRA, or any other matter.