



**Actuaries
Institute.**

11 April 2024

National Adaptation Policy Office
Department of Climate Change, Energy, the Environment and Water
GPO Box 3090
Canberra ACT 2601

Email: climate.adaptation@dcceew.gov.au

Dear Sir/Madam,

National Adaptation Plan: Issues Paper

The Actuaries Institute ('the Institute') welcomes the opportunity to make a submission to this consultation on the development of Australia's first National Adaptation Plan ('the Plan' or NAP).

The Institute is the peak professional body for actuaries in Australia. Our members work in a wide range of fields including insurance, superannuation and retirement incomes, enterprise risk management, data analytics, climate change impacts and government services. The Institute has a longstanding commitment to contribute to public policy discussions where our members have relevant expertise. The comments made in this submission are guided by the Institute's '[Public Policy Principles](#)' that any policy measures or changes should promote public wellbeing, consider potential impacts on equity, be evidenced-based and support effectively regulated systems.

The Institute's response to this consultation draws on the long history of the profession's expertise in physical climate risk modelling, climate risk assessment and management, and decision making under uncertainty. Looking forward we believe the insurance industry and broader financial sector plays a critical role in building socio-economic resilience and enabling entrepreneurial pathways for achieving climate change adaptation.

General comment

With climate change one of the greatest challenges facing Australia, the Institute welcomes the commitments the Government has already made to decarbonise the Australian economy (mitigate climate change) and to disaster risk resilience and reduction initiatives, including through the Disaster Ready Fund, the development of the National Climate Risk Assessment and this proposed National Adaptation Plan. The consultation paper, in section 1.5.2, provides a useful summary of various international agreements to which Australia is a party and in which the Plan is being developed; this is important context.

Responses to specific questions

Foundations for a National Adaptation Plan

- What do you think a well-adapted and resilient Australia looks like? Does the draft vision capture this? Why, why not? Do you agree with the key objectives of the plan? What other suggestions do you have?
- The plan will respond to the priority nationally significant risks identified in the National Climate Risk Assessment. Within those, what areas should be the Commonwealth's priority for this National Adaptation Plan and why?
- What is working well in adaptation policy governance at the national level? Are there more opportunities for collaboration, or institutional changes that will help build a more adapted Australia?
- How should adaptation success be measured?
- What time horizon should the National Adaptation Plan cover?
- Do you support the draft principles for prioritising and sequencing adaptation actions over time? Why or why not? Are there any gaps?

Answer:

The Institute encourages a bold and ambitious vision for the Plan. This should reflect the critical importance that vision plays in driving activity, and the significance of the risks Australian society faces if we do not adapt to climate change. The NAP should recognise the size of the challenge, degree of uncertainty, and critical implications of insufficient action. We note that in the recent consultation on the Government's Sustainable Finance Strategy that Treasury proposed as a key principle that "Australia should take a high-ambition approach"¹.

The NAP should be developed as an important part of the climate policy architecture in Australia. A successful NAP would be:

- part of an integrated suite of climate policies, such that the NAP is integrated with, informs and responds to the net zero transition plan, National Disaster Risk Reduction Framework, National Risk Assessment, and other parts of climate change policy architecture. These elements should inform and guide one another;
- supported by formal and informal institutions and practices that are well-aligned across sectors, policy domains and timeframes;²
- implemented in a timely, cost-effective, and inclusive way to ensure that all Australians are equipped to adjust to Australia's changing climate and are resilient to acute and chronic climate risks;
- regularly monitored, measured, verified and reported upon for transparency; and
- dynamic and include appropriate recognition and response to the deep uncertainty associated with climate change exposure, impacts, vulnerability and adaptation.

¹ Page 7 of <https://treasury.gov.au/sites/default/files/2023-11/c2023-456756.pdf>

² https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

A successful NAP should consider the uncertainty³ associated with the impacts of climate change (including because of ‘tipping points’) and the resources available to assess, manage and adapt to climate change. There was minimal discussion of uncertainty in the consultation paper, despite each of the priority nationally significant risks identified in the National Climate Risk Assessment being subject to material levels of uncertainty.

Uncertainties about the future can gradually diminish over time, but new “unknown unknowns” often arise. Responses to uncertainty call for dynamic strategies and planning that consider timely responses to changes in knowledge, and consistently update plans and actions as new information emerges. As noted in the IPCC AR6 report *“Governance efforts that advance climate resilient development account for the dynamic, uncertain and context-specific nature of climate-related risk... Institutions that enable climate resilient development are flexible and responsive to emergent risks and facilitate sustained and timely action. Governance for climate resilient development is enabled by adequate and appropriate human and technological resources, information, capacities, and finance”*⁴.

We support the proposed objectives for the NAP, although suggest the objectives should also include driving the substantial uplift in public sector investment required, as well as public and private sector partnerships. Finance is a critical enabler of adaptation, yet globally the need for investment in adaptation greatly exceeds the volume of actual adaptation finance⁵. Globally adaptation finance significantly lags investment in mitigation and falls short of the amount needed to close the adaptation finance gap. Average annual adaptation finance was USD63 billion in 2021/22, a fraction of the annual mitigation finance amount of almost USD1.2 trillion. A significant adaptation finance gap remains – worldwide, it is estimated at between USD194 billion and USD366 billion per year⁶. Both public and private investment will be critical sources of closing the gap, which is too large for any one sector to fund alone.

There are several barriers to private sector investment, including:

- information asymmetries and knowledge gaps;
- an inability of the private sector to fully capture the benefits from an adaptation investment, as the benefits of such investment are often widespread across communities, public sector and the private sector; and
- the inherent long-term nature of adaptation projects means many adaptation investments have long and uncertain pay back periods, which makes business cases difficult⁷.

To encourage more private sector investment in adaptation, the following solutions are proposed:

- financial or policy de-risking actions for reallocating, sharing or reducing risks associated with adaptation investment (in the field of clean energy investment the Capacity Investment Scheme is an example of a policy structure that derisks revenue streams from clean energy projects)

³ Uncertainty should be distinguished from risk and is commonly understood to mean ‘the lack of sufficient information, knowledge or understanding of phenomena’.

⁴ https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf and see also https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap15_FINAL.pdf

⁵ See UNEP [Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed](#)

⁶ UNEP [Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed](#)

⁷ [Blog: Unlocking Private Sector Adaptation Finance - CPI \(climatepolicyinitiative.org\)](#)

- other innovative financing mechanisms such as government co-funding (debt and/or equity) which can assist in mobilising greater-than-otherwise private sector investment; and
- recognising that in some instances the investments are more suited to funding by government (potentially across multi-levels of government including Commonwealth, State and Territory and Local, collectively).

Early adaptation investments may be highly cost-effective, with research into pilot adaptation actions showing benefit-cost ratios from 2:1 to 10:1⁸. The principles for prioritising and sequencing adaptation actions should also recognise that an effective adaptation framework needs to be cost-effective relative to both the severity and probability of future avoided outcomes, for both the current Australian population and future generations. The concept of "no regrets" should be extended to recognise that actions taken now should not inadvertently exacerbate or accelerate climate change or environmental damage (i.e., should avoid maladaptation) for example, adaptation actions that destroy natural habitat.

Tackling the barriers to both public and private adaptation investment, in the face of uncertainty, requires a rigorous approach with high transparency. The Institute encourages the Government to consider alternative frameworks that account for these challenges and provide public support for research and collaboration around the development of robust and transparent frameworks for long-term decision making on adaptation. Specific examples of frameworks include:

- cost-benefit analysis, which include best estimate future climate related costs and benefits under different climate scenarios for specified time horizons of 30 years or longer;
- multicriteria analysis, which can supplement the output of cost-benefit analysis which concentrate on financial measures such as net present value, by also considering criteria such as equity, biodiversity and social good⁹;
- real options, which allows for the incorporation of both uncertainty and new information. It adapts the techniques developed for financial options to real-life decisions and can be used to help determine optimal investment timing and sequencing¹⁰; and
- dynamic adaptation pathways planning, which identifies ways forward (pathways) while remaining responsive to change should this be needed (dynamic). Pathways are mapped that will best manage, reduce or avoid risk. A plan is developed, with short-term actions and long-term options, and includes pre-defined points (triggers) where decisions can be revisited. Under this approach larger investments are made as climate impacts meet the pre-defined triggers or thresholds, rather than large investments made upfront. This approach embraces flexibility and provides a way to consider uncertainty in decision-making. For example, adaptation pathways for coastal erosion might consider dune restoration for sea level rise below a certain threshold level, and only invest in a seawall if sea level rise passes that threshold¹¹.

In addition, much can be learnt from frameworks for actuarial management¹² already used by public and private sector bodies in Australia for investment decisions and policy making in the face of uncertainty. The actuarial management approach would involve:

⁸ [Adapt Now: A global call for leadership on climate resilience](#) and [2023-11-14-sri-climate-adaptation.pdf \(swissre.com\)](#)

⁹ A discussion of this provided in [Investing in resilience: A business case for climate adaptation | Actuaries Digital](#)

¹⁰ For an application of this tool refer [Flood Risk Management and Adaptation Under Sea Level Rise Uncertainty | SOA](#)

¹¹ <https://environment.govt.nz/assets/Publications/Files/coastal-hazards-summary.pdf>

¹² Also known as the "actuarial control cycle".

- regular (e.g., triennially) actuarial review of actual versus expected progress and/or success of adaptation;
- a review of current policy settings under updated scenarios, reflecting the most up to date views on risk and uncertainties;
- a review of whether any pre-set trigger points have been passed;
- recommendations regarding responses or updating of adaptation policies or plans in scope; and
- the use of (actuarial) modelling to help quantify the impacts and uncertainties of a new policy direction.

Actuarial management approaches are already used underpin long-range public investment involving uncertainty, for example by the Australian Reinsurance Pool Corporation, the National Disability Insurance scheme, and by the Department of Social Services 'Priority Investment Approach' to welfare¹³. The concepts behind actuarial management, or the actuarial control cycle, can easily be applied to climate adaptation planning and policy making. Such an approach could facilitate agile policy setting which, in the context of climate change, is especially important given high uncertainty.

The principles for prioritising and sequencing of adaptation actions by necessity need to look over a long-term horizon, e.g., at least 30 years. However, climate risk is a pressing current issue and the principles should encourage both short- and long-term modelling and scenarios to be considered, such that selected actions are robust under a range of time frames and climate pathways. We recommend that the NAP align to the globally accepted frameworks such as IPCC for consideration of future pathways. The use of different discounting assumptions to compare future actions and outcomes should not be at the detriment of taking immediate action, but as part of a well-considered range of models.

Some examples can illustrate the importance of the NAP and the National Climate Risk Assessment considering risks over different time horizons and taking a forward-looking rather than backward-looking approach. While some perils have not caused significant economic damages in Australia to date, the nature of our changing climate means climate risks could cause significant economic and non-financial damage in the future if the frequency and severity of those perils increases. For example, hazards such as storm surge/actions of the sea and flooding are likely to change in future due to the impact of climate change on east coast lows, extreme rainfall and/or sea levels. A very high proportion of the Australian population lives in coastal or flood exposed locations, but home buildings insurance policies do not generally include coverage for actions of the sea, including coastal erosion and inundation, and the secondary impacts triggered such as upstream riverine or estuarine flooding. Research by the Institute shows there is often a correlation between households with very high natural hazards risk (e.g., very high cyclone and/or flood risk) and lower household income. This means that the households most adversely impacted by natural hazards often have fewer economic resources to fund post-disaster recovery¹⁴, and are also likely to lack financial means to fund adaptation. We therefore encourage the NAP to include these risks as a priority area¹⁵.

¹³ The [Interim Economic Inclusion Advisory Committee 2023-24 Report to the Australian Government](#) recommended (in relation to Addressing disadvantage in places where it is concentrated) that "the Government commit to use actuarial and whole-of-society modelling such as the Priority Investment Approach to underpin long-range investment in alleviation strategies, with returns tracked and savings through cost avoidance reported. This may best be first applied to communities where place-based strategies are active. New models and tools capable of capturing social and non-monetary benefits that are difficult to quantify will also be needed".

¹⁴ Refer s.4.2 of [Home Insurance Affordability Update \(actuaries.asn.au\)](#)

¹⁵ A discussion of these risks for NSW is provided in the recent [State Disaster Mitigation Plan](#).

The Institute notes it is proposed that the NAP not include transition risks from climate change. These risks are significant and could materially impact the economy and financial markets if not well managed. We encourage the NAP to at least be informed by transition risks, potentially by the DCCEEW in coordination with other Government agencies and initiatives (such as the Net Zero Economy Agency). Potentially, as agency capacity builds, the NAP could draw together both risks.

Systems sections

- What other existing policies are supporting adaptation for this system?
- Who should be undertaking action to strengthen adaptation action in this system?
- What are the barriers to strengthening adaptation? How could the National Adaptation Plan help with these?
- What policies could be strengthened or added as the highest priorities?
- What measurement and evaluative tools and processes should be implemented to track adaptation progress for this system?

Answer:

The Institute strongly supports the strengthening and future-proofing of both building codes and land use planning rules to improve the resilience of communities, considering the multi-decade expected lifespan of building structures and uncertainty in climate change scenarios¹⁶.

A key barrier to strengthening adaptation is the limitation of publicly available data. The Institute supports the intent of the Hazards Insurance Partnership initiative, and the underpinning of free publicly available data to all households, businesses and individuals of the climate risk that they are now facing and may be expected to face in the future. There is an appropriate government role to fund national data collection and distribution on a public database¹⁷.

Insurance pricing can provide a risk signal to policyholders to encourage both adaptation and mitigation activities, although due to the one-year term of most domestic insurance policies, the strength of the signal of future climate risk is limited. Because lending contracts span longer-terms, a stronger signal of future climate risk could be provided by lenders (for properties that involve a loan).

The Institute recognises that while the combination of improved land use planning and building codes and the availability of data will help uplift future resilience and adaptation, there may be adverse implications for existing structures and land uses which should be carefully considered to ensure the NAP supports an inclusive and equitable adaptation (refer to our earlier comments about the vision for the NAP).

As noted in the Institute's [recent submission](#) to the Treasury consultation on Standardising natural hazard definitions and reviewing standard cover for insurance, this can include for consumers who did not know of an emerging risk at the time they purchased their home and, partly due to advances in technology which allow for address level pricing, now face significant insurance affordability pressure. In this instance, and in limited situations, a government subsidy could be considered. The subsidy could be managed with the aim of unwinding it over time as the underlying risk is reduced through, for

¹⁶ Further specific comments on building codes and land use and planning are provided in the Institute's 2022 Green Paper on [Home insurance affordability and socioeconomic equity in a changing climate](#), sections 2.5, 6.3 and 6.4.

¹⁷ Further specific comments on data are provided in the Institute's 2022 Green Paper on [Home insurance affordability and socioeconomic equity in a changing climate](#), s.6.8 and in the Institute's 2023 Report on Funding for Flood Costs, and which note the work of the Resilient Building Council as an example, and how these could be considered for potential incorporation into building codes.

example, community and/or household level mitigation and adaptation investments or, if required and acknowledging the very significant resources involved, supported relocations. Crucially, the Institute would encourage subsidies to be limited to existing properties only so that further development is not encouraged in high-risk areas.

We strongly support the development of the Sustainable Finance Strategy and refer to our comments in that [recent submission](#). Key points we draw to DCCEEW's attention are:

- The need for further evolution of the Your Future, Your Super performance test to ensure the test does not hinder investment by superannuation funds in decarbonisation and the transition to net zero, so long as these investments are in the best financial interests of members; and
- Encouraging adaptation investments by providing a transparent and well-structured financial regulatory environment to enable, for example, green bonds, without making such framework excessively onerous or restrictive to inhibit innovation.

Specific questions for the First Nations' values and knowledges system

- What are some examples of First Nations-led adaptation action and partnerships? How can these actions and partnerships be better supported?
- Along with First Nations peoples, who should be undertaking action to strengthen First Nations-led adaptation action and partnerships?
- What are the barriers to strengthening First Nations-led adaptation action and partnerships? How could the plan help with these?
- What First Nations-led adaptation actions and partnerships should be prioritised now to support medium-term (2050) and long-term (2100) adaptation?
- What First Nations' knowledges frameworks can support measurement and evaluative tools and processes to track adaptation progress?
- What are the biggest opportunities for First Nations peoples in the context of the National Adaptation Plan?

Answer:

We refer to section 6.5 of the Institute's 2022 Green Paper on [Home insurance affordability and socioeconomic equity in a changing climate](#) which provides a discussion of Nature based Solutions and First Australians knowledge.

Finally, with the large number of governance bodies and initiatives set out in the Plan, the Institute recommends that there should be an explicit focus on ensuring these are aligned, effective and efficient, with a view to simplifying these where possible.

The Institute would be willing to discuss this submission further. If that would be of assistance, please contact the Institute via (02) 9239 6100 or public_policy@actuaries.asn.au.

Yours sincerely

(Signed) Elayne Grace
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