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IPCC WG2 Briefing for Media

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1. Key takeaways from this report

This report makes clear that the climate crisis is now upon us, and will be the greatest challenge humanity has ever faced. With the survival of millions of lives, ecosystems and species on the line, on a scale never before seen, there is no time to waste. We must throw

every effort into tackling the climate crisis, and that means deep, rapid emissions cuts within the next few years.

Dire climate impacts are here, accelerating, and becoming more severe.

Climate change is already hurting Australia and the Pacific, and it will get worse. Scientists have now concluded that we face greater climate risks at lower global warming levels than assessed before. Already now, warming effects on ecosystems have been experienced earlier, are more widespread and with further-reaching consequences than anticipated.

Survival depends on exiting fossil fuels, now. Current emissions reduction efforts aren't enough to meet the climate challenges we face. We need deeper, faster emissions cuts this decade, and rapid phase out of coal and gas over the next few years, to give our world, and the ecosystems we rely on and love, a chance of surviving the climate crisis.

The climate threat has now reached a point where we must now mitigate our failure to prepare, as well as limit our continued impact. We must leave no one behind, and plan for climate resilient communities under all possible scenarios of warming, recognising that many of our most climate vulnerable people, such as indigenous communities and the elderly, have so far seen little benefit from current adaptation measures.

We must be honest and realistic about the limits of adaptation for climate-vulnerable communities and ecosystems. The latest science tells us many communities, species and precious ecosystems in Australia and the Pacific cannot adapt to the speed and scale of the climate crisis. Any adaptation measures must be underpinned by much stronger, faster emissions reduction, and a clear-eyed view of the limits of possible adaptation.

Every fraction of a degree of warming makes a crucial difference. Emissions from burning coal, oil and gas are driving the climate crisis, and the faster we cut emissions, the more climate damage we can avoid. We must do everything possible to deeply and rapidly reduce emissions, while also preparing for climate impacts that can no longer be avoided.

2. Main findings of the report

Overall/ Global

- **1.5 degrees:** Reinforcing the findings of the WGI report, with very high confidence, scientists state that 1.5 degrees of global warming will be reached in the near-term

(before 2040). This WGII report details the impacts of this level of warming, and other warming levels, using the most up to date science.¹ This report further strengthens 1.5°C as the benchmark that shouldn't be crossed, if the world is to avoid many key risks reaching high and very high levels. Near term actions that limit global warming to close to 1.5 degrees would substantially reduce projected losses and damages, compared to higher warming levels, but cannot eliminate them all (very high confidence).² Projected losses and damages escalate with every increment of warming (very high confidence).³

- **Climate risks:** With this projected global warming, there will be unavoidable increases in multiple climate hazards, which will present multiple risks to humans and ecosystems.⁴
- **Projections for 'Reasons for Concern' have become more severe since AR5:** All five Reasons for Concern will become high to very high at lower global warming levels than assessed in AR5. Two reasons for concern are high to very high in the near-term: risks to unique and threatened ecosystems at 1.5 degrees (high confidence) and risks associated with extreme weather events at 2 degrees (medium confidence).⁵
- **Climate risks and vulnerability:** Climate risks to humans and ecosystems depend strongly on vulnerability and exposure. Risks are highest where people and species exist close to their upper thermal limits, along coastlines, in close association with ice or seasonal rivers, where multiple non-climate risks persist or where vulnerability is otherwise elevated (high confidence).⁶
- **Vulnerability is unequally distributed across the globe:** All humans are vulnerable to climate change, but not equally so. In addition to differing exposure due to geographic factors and level of climate sensitive livelihoods, socio-economic factors increase human vulnerability, such as inequity, poverty, poor governance, economic/development status, ongoing effects of colonialism and financial limits to adaptation.⁷
- **Interaction of risks:** Multiple climate hazards will occur simultaneously and multiple risks will interact, resulting in compounding overall risk and risks cascading across sectors and regions. Further, climate risks will interact with and compound human-induced non-climatic risks such as unsustainable use of natural resources, deforestation, loss of biodiversity and pollution, with negative consequences for biodiversity and humans. With more warming, the likelihood of compounding and

¹ SPM B.3; SPM D.5.

² SPM B.3.3.

³ SPM B.4.

⁴ SPM B.3.

⁵ SPM B.3.3.

⁶ SPM 3.2.

⁷ SPM B.2; TS B.9.4.

cascading climate risks increases.⁸

- **There are already significant impacts on human health:** Climate change has adversely affected the physical and mental health of people in all regions (very high confidence). Human disease risk has increased, in particular climate related food-borne and water-borne diseases (very high confidence), vector-borne diseases (high confidence), marine pathogens (high confidence), and diarrheal diseases including cholera (very high confidence).⁹
- **These health impacts will worsen:** In the future, these human health impacts will worsen under different warming scenarios. As just one example, dengue risks will increase with longer seasons and a wider geographic distribution, putting an additional 2.25 billion people at risk under 2.6 degrees warming.¹⁰
- **Biodiversity impacts will worsen** under the different warming scenarios: near term warming and increased frequency and severity of extreme events will mean high or very high risks of loss for many terrestrial, freshwater and marine ecosystems. Near term risks of losses are high to very high in Arctic sea-ice ecosystems and warm water coral reefs. Under 1.5C of warming, we can likely expect 3-14% of species in terrestrial systems to face high risk of extinction. Biodiversity losses and damages escalate with every increment of warming. Projected extinction risk for endemic species in biodiversity hotspots increases roughly ten fold as warming rises from 1.5 degrees to 3 degrees.¹¹
- **Human dependence on ecosystems:** Since AR5, there is further evidence that human driven degradation and destruction of ecosystems increases the vulnerability of people due to human reliance on biodiversity (for pollination, food, carbon sequestration, etc). With high confidence, scientists find that deforestation, loss of biodiversity, pollution and unsustainable use of natural resources adversely affect the capacities of nature and people to adapt to climate change.¹²
- **Adaptation is urgently required:** In the near term, climate hazards do not vary strongly between different emissions scenarios.¹³
- **Current adaptation efforts are highly inadequate:** Most adaptation efforts to date are inadequate or even maladaptive, focusing only on single-sector, short term and non-integrated solutions usually in response to an extreme weather event. For adaptation to succeed, it needs to be transformational and long term.¹⁴

⁸ SPM B.5; SPM B.2.1.

⁹ SPM B.1.4.

¹⁰ SPM B.4.4; TS C.6.5.

¹¹ SPM B.4.1.

¹² SPM B.2.1; SPM D.4.3.

¹³ SPM 3.2.

¹⁴ Figure SPM 4.

- **There is a significant shortfall for financing adaptation:** Adaptation is unequally distributed globally, and gaps are partially driven by widening disparities between the estimated costs of adaptation and documented finance allocated to adaptation.¹⁵
- **Maladaptation can be minimized:** by planning that accounts for the time it takes to adapt (high confidence), for uncertainty about the rate and magnitude of climate risk (medium confidence) and anticipates a wide range of potentially adverse consequences of adaptive actions (high confidence).¹⁶

Australia

- **Australia has already experienced irreversible climate impacts:** With very high confidence, scientists find that there have been major impacts to natural systems in Australia, with some experiencing or at risk of experiencing irreversible change. For example, the Bramble Cay melomys became extinct due to loss of habitat associated with sea level rise and storm surges in the Torres Strait. Marine species have shifted polewards, and there are extensive coral bleaching events and loss of temperate kelp forests due to ocean warming and marine heatwaves in the Australasian region.¹⁷
- **Further climate impacts are inevitable for Australia** with the rate and magnitude of these impacts largely dependent on the emissions pathway (very high confidence). More hot days and fewer cold days are projected with very high confidence. Further sea level rise, ocean warming and ocean acidification are projected with very high confidence.¹⁸
- **Human health impacts will worsen:** Increases in heat-related mortality and morbidity for people in Australia due to heatwaves are projected, with an increase in 300 deaths per year (under a low emissions pathway) and 600 per year (under a high emissions pathway) during 2031-2080 compared to the 1971-2020 period.¹⁹
- **More bushfires:** Globally, 2 degrees warming, and associated changes in precipitation, is projected to increase global land areas burned by wildfire by 35%.²⁰ Within Australia, more droughts and extreme fire weather are projected in southern

¹⁵ SPM C.1.2; SPM C.3.

¹⁶ SPM C.4.4.

¹⁷ Chapter 11, Executive Summary.

¹⁸ Chapter 11, Executive Summary.

¹⁹ Chapter 11, Executive Summary.

²⁰ TS 21.

and eastern Australia with high confidence.²¹

- **Several of Australia's ecosystems are at critical thresholds with devastating impacts for biodiversity:** The Great Barrier Reef and Australia's alpine regions are at critical thresholds with loss and degradation of corals and increased stress on alpine animals and plants.²²
- **There are many other species and ecosystems at severe risk in Australia but these risks can be reduced by rapid, large-scale and effective mitigation and adaptation:** Alpine ash, snowgum woodland, pencil pine, and northern jarrah forests are at risk of bushfires and droughts. Kelp forests are at risk due to ocean warming, marine heatwaves and overgrazing of fish that have migrated to new areas due to climate change. Agricultural yield has been disrupted and has declined in south-western, southern and eastern mainland Australia, and is projected to decrease by 15% in South Australia and 30% in south west Australia by 2050.²³
- **Aboriginal and Torres Strait Islander Peoples are exposed and vulnerable to climate impacts:** Coastal flooding has increased due to sea level rise, superimposed upon high storm surges in low-lying coastal and estuarine locations with impacts on cultural sites, traditions and lifestyles of Aboriginal and Torres Strait Islander Peoples.²⁴ With high confidence, scientists state that climate risks are projected to exacerbate existing vulnerabilities and social inequalities between Indigenous and non-Indigenous peoples in Australia.²⁵ It is critical that the exposure and vulnerability of different groups in society, including Indigenous Peoples, is taken into account in adaptive implementation.²⁶ This provides an important update to the AR5 round, as in the AR5 regional chapter on Australia, vulnerability along socio-economic dimensions had not been assessed.
- **Tourism in Australia has been negatively impacted by climate change** due to coral bleaching, fires, poor ski seasons and receding glaciers.²⁷
- **Adaptation progress in Australia is uneven, due to gaps, barriers and limits to adaptation, and adaptive capacity deficits:** Progress is lacking, meanwhile adaptation limits are being approached for some ecosystems and species. Lack of engagement with Aboriginal and Torres Strait Islander communities is creating barriers and limits to adaptation. Adaptation to date has mostly been reactive, but must become anticipatory.²⁸ With very high confidence, scientists state that "a step change in adaptation is needed to match the rising risks and to support climate

²¹ Chapter 11, Executive Summary.

²² Chapter 11, Executive Summary.

²³ Chapter 11, Executive Summary.

²⁴ Chapter 11, Executive Summary.

²⁵ Chapter 11, Executive Summary.

²⁶ Chapter 11, Executive Summary.

²⁷ Chapter 11, Executive Summary.

²⁸ Chapter 11, Executive Summary.

resilient development” in Australia.²⁹

- **The window for adaptation and climate resilient development is shrinking:** climate resilient development prospects are increasingly limited if current greenhouse gas emissions do not rapidly decline, especially if 1.5 degrees global warming is exceeded in the near term (high confidence).³⁰ For Australia, scientists state with very high confidence that any “delay in implementing adaptation and emission reductions will impede climate resilient development, resulting in more costly climate impacts and greater scale of adjustments”.³¹
- **Projected population growth needs to be carefully managed to minimize impacts:** Australia’s population is projected to grow to 37.4-49.2 million by 2066, with most growth taking place in major cities (many coastal) and coastal regional areas. “Consideration of climate change impacts when planning and managing such growth and associated infrastructure could help avoid new vulnerabilities being created, particularly from wildfires, sea-level rise, heat stress and flooding.”³²
- **Technological ‘solutions’ are not enough, and are in some cases, maladaptive:** New risks emerge from responses to climate change, including maladaptation, adverse side effects of mitigation and risks from solar radiation modification (high confidence). Deployment of afforestation of naturally unforested land or poorly implemented bioenergy with or without carbon capture and storage can compound climate-related risks to biodiversity, water and food security, and livelihoods.³³
- **Climate change is having economic impacts and these will worsen:** Globally, economic damages from climate change have been detected in climate-exposed sectors, with regional effects to agriculture, forestry, fishery, energy and tourism, and through outdoor labour productivity.³⁴
- **The renewable energy transition is good for mitigation and adaptation:** Within energy systems, the most feasible adaptation options support infrastructure resilience, reliable power systems and efficient water use (very high confidence). “Climate responsive energy markets, updated design standards on energy assets according to current and projected climate change, smart-grid technologies, robust transmission systems and improved capacity to respond to supply deficits have high feasibility in the medium- to long-term, with mitigation co-benefits (very high confidence).”³⁵

²⁹ Chapter 11, Executive Summary.

³⁰ SPM D.5.

³¹ Chapter 11, Executive Summary.

³² Chapter 11, 1.2.

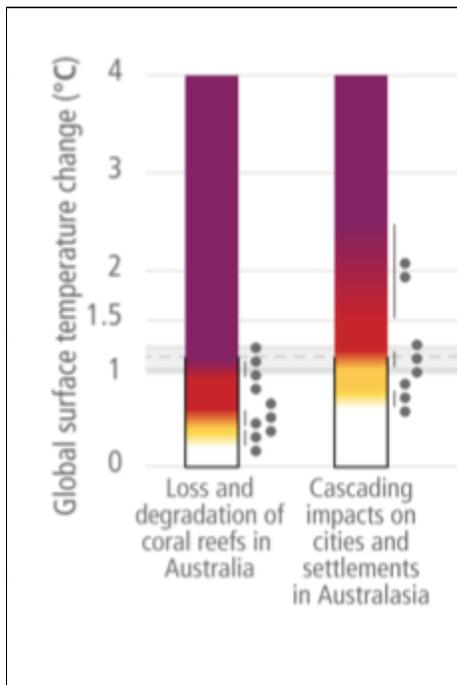
³³ SPM B.5.4.

³⁴ SPM B.1.6.

³⁵ SPM C.2.10.

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| Aus-
tralia | <ul style="list-style-type: none"> - Degradation of tropical shallow coral reefs and associated biodiversity and ecosystem service values - Loss of human and natural systems in low-lying coastal areas due to sea-level rise - Impact on livelihoods and incomes due to decline in agricultural production - Increase in heat-related mortality and morbidity for people and wildlife - Loss of alpine biodiversity in Australia due to less snow |
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(SPM Figure 3 [f], compilation of key risks per region: risks identified with at least medium confidence)



(Figure SPM 3 [d], showing two key risks for Australasia. Risk/impact is indicated by colour with white meaning ‘undetectable’ risk and purple meaning ‘very high risk’. The small circles represent confidence levels, with four circles indicating ‘very high confidence’.

Reefs and Coral Reefs

- **Coral reefs are already in a bad state:** With very high confidence, scientists project loss and degradation of much of the world’s coral reefs.³⁶ Climate related extremes have caused bleaching and mortality events for warm water coral reefs.³⁷ Between

³⁶ SPM B.2.3.

³⁷ SPM B.1.1.

1.09 degrees (current levels of warming) and 1.5 degrees of warming, the impact on coral reefs will be high.³⁸

- **1.5 degrees of warming will be devastating for coral reefs:** As 1.5 degrees is likely to be reached or surpassed in the near-term, risks to biodiversity loss are “high to very high in warm water coral reefs.” Scientists state this with very high confidence.³⁹
- **Over 1.5 degrees of warming will result in irreversible loss of the world’s coral reefs:** If the 1.5 degree warming limit is surpassed, even temporarily before being brought down below 1.5 degrees, then it is predicted we will see an irreversible loss of the world’s coral reefs (high confidence).⁴⁰
- **Many species, including corals, are at their adaptation limits:** Some species have hard limits (e.g.: biophysical limits) making adaptation beyond certain temperatures impossible.⁴¹ This IPCC report refers to the coral reefs of the Great Barrier Reef as an ecosystem “at critical threshold” where scope for adaptation is “limited” and further climate change may be “irreversible”.⁴²
- **Marine species are highly vulnerable to climate change:** We have already seen mass mortality events in the ocean. The risk of biodiversity loss in the ocean ranges between moderate and very high by 2 degrees of warming (high confidence), increasing to high or very high across most ocean and coastal ecosystems by 3 degrees warming (medium to high confidence, depending on ecosystem).⁴³
- **Globally, very little of the ocean is protected:** There is a significant need for greater protection of the ocean: globally less than 8% of the ocean is protected, often with insufficient stewardship to prevent damage or increase resilience against climate change.⁴⁴
- **30-50% of the ocean needs to be protected to maintain climate resilient biodiversity:** Recent analyses, drawing on a range of lines of evidence, suggest that maintaining the resilience of biodiversity and ecosystem services depends on effective and equitable conservation of approximately 30 to 50% of Earth’s land, freshwater and ocean areas (high confidence).⁴⁵

³⁸ Figure SPM.3.

³⁹ SPM B.3.1.

⁴⁰ TS C.2.1.

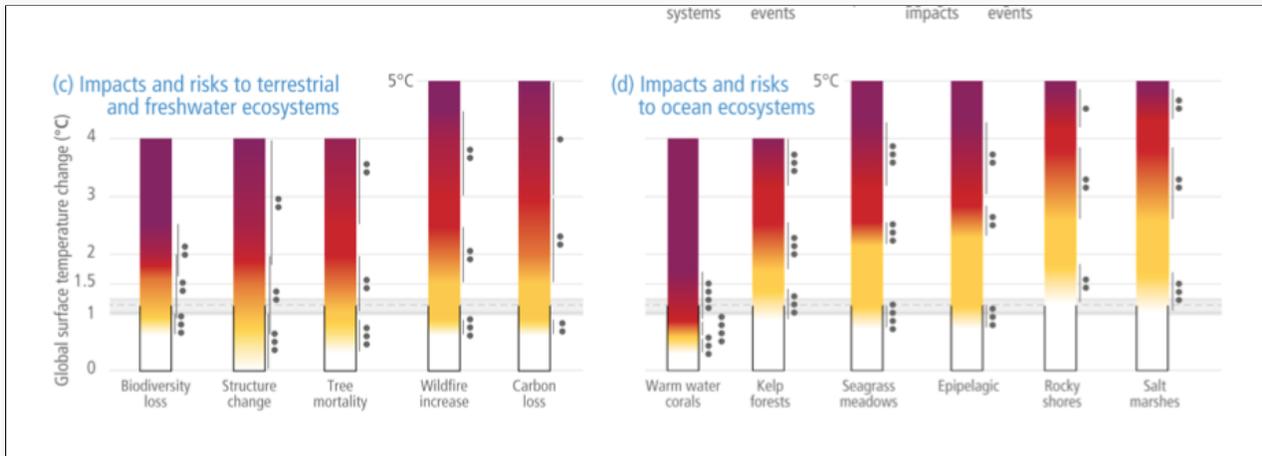
⁴¹ SPM C.3.3.

⁴² Chapter 11, Executive Summary.

⁴³ SPM B.4.1.

⁴⁴ SPM B.2.2.

⁴⁵ SPM D.4.



(Figure SPM 3 [d], showing high risk to warm water coral reefs at current levels of warming and very high risk above 1.5 degrees of warming. Risk/impact is indicated by colour with white meaning ‘undetectable’ risk and purple meaning ‘very high risk’. The small circles represent confidence levels, with four circles indicating ‘very high confidence’.)

Pacific Islands

- Climate vulnerability:** Small Islands Developing States, including the Pacific islands, are deemed highly vulnerable to climate change due to geographic factors and climate sensitive livelihoods (e.g. fishing communities), and how these factors intersect with socio-economic factors such as development, inequity including health inequity, poverty, and financial barriers to adaptation.
- 1.5 degrees warming:** The report contains several ‘very high confidence’ statements that global warming will reach or surpass 1.5 degrees in the near term (before 2040) in the assessed scenarios, with impacts worse at near-term levels of warming than previously assessed.
- Losses and damages:** Climate change has already caused widespread adverse impacts and related losses and damages to nature and people, beyond natural climate variability.⁴⁶ Adverse impacts from tropical cyclones, with related losses and damages, have increased due to sea level rise and the increase in heavy precipitation.⁴⁷ Near term actions that limit global warming to close to 1.5 degrees would substantially reduce projected losses and damages related to climate change in human systems and ecosystems, compared to higher warming levels, but cannot eliminate them all (very high confidence).⁴⁸ Projected adverse impacts and related

⁴⁶ SPM B.1.

⁴⁷ SPM B.1.1.

⁴⁸ SPM B.3.3.

losses and damages escalate with every increment of warming (very high confidence).⁴⁹

- **Projected climate impacts for the Pacific are severe, threatening lives and livelihoods:** Sea level rise is projected to impact ecosystem services and human lives and livelihoods, particularly as 90% of Pacific peoples live within 5km of the coast. Substantial freshwater decline is projected for all Pacific islands except the Western Pacific, due to aridity and saltwater intrusion. Due to ocean warming and acidification, coral reefs are projected to experience severe bleaching on an annual basis before 2040. These reefs provide much-needed ecosystem services to Pacific communities, in the form of natural defense against tropical cyclones and storm surges. These reefs provide much-needed ecosystem services to Pacific communities, in the form of natural defense against tropical cyclones and storm surges. Most Pacific island countries could experience over 50% declines in maximum fish catch potential by 2100 under both low emissions and high emissions pathways. Under a high emissions scenario, Pacific atoll islands will likely undergo annual wave drive flooding over their entire surface from the 2060s to 2090s.⁵⁰
- **Maladaptation:** Most adaptation taking place now is maladaptive, addressing only short term and specific risks in a fragmented and reactionary manner. What is needed is transformational and long-term adaptation. Sea walls are provided as an example of maladaptation, as they reduce impacts to people and assets in the short term, but “can lock-in and increase exposure to climate risks in the long-term unless they are integrated into a long-term adaptive plan (high confidence)”.⁵¹
- **Migration:** Displacement will increase with intensification of heavy precipitation and associated flooding, tropical cyclones, drought and, increasingly, sea level rise (high confidence).⁵² Unfortunately, the need for planned relocations by governments is expected to grow, if or when adaptation limits are reached.⁵³ Planned migration will better protect lives and human rights than displacement/ migration under duress if or when adaptation limits are reached; however, it will have implications for traditional livelihood practices, social cohesion and knowledge systems that have inherent value.⁵⁴
- **Climate finance:** Adaptation is unequally distributed across regions, and gaps are partially driven by widening disparities between the estimated costs of adaptation and documented finance allocation to adaptation.⁵⁵ Adaptation gaps remain due to limited financial means, including gaps in international adaptation finance.⁵⁶

⁴⁹ SPM B.4.

⁵⁰ Chapter 15, Executive Summary.

⁵¹ SPM C.4.1.

⁵² SPM B.4.7.

⁵³ TS B.6.4.

⁵⁴ TS C.7.3.

⁵⁵ SPM C.1.2.

⁵⁶ TS B.9.4.

Small Islands	<ul style="list-style-type: none">- Loss of terrestrial, marine and coastal biodiversity and ecosystem services- Loss of lives and assets, risk to food security and economic disruption due to destruction of settlements and infrastructure- Economic decline and livelihood failure of fisheries, agriculture, tourism and from biodiversity loss from traditional agroecosystems- Reduced habitability of reef and non-reef islands leading to increased displacement- Risk to water security in almost every small island
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(Figure SPM.3 [f] compilation of key risks per region: risks identified are of at least medium confidence level.)

3. Greenpeace Australia Pacific's policy demands

This report has significant implications for global and Australian climate policy. Further work must be done to determine an appropriate level of emissions reduction and adaptation work to protect our most vulnerable communities and ecosystems, but it is clear that Australia's climate response must be significantly scaled up to meet the challenges ahead.

Greenpeace Australia Pacific's policy demands, coming out of this report:

1. Australia must make more and faster emissions cuts, now.

Australian emissions cuts must be much stronger and faster to protect Australians and our Pacific neighbours from near-term climate catastrophe. The very survival of humanity, the natural world and ecosystems that support us depend on it. Every degree of warming makes a difference, and the faster we can reduce emissions the greater chance we have of containing climate damage - and so far, Australia's emissions reduction efforts, the weakest in the developed world, have been wildly inadequate. Climate damage is already hurting Australians and Pacific peoples, and this is a problem that must be solved now, not at a future date.

2. Australia must now put in place a climate safety net that ensures no one is left behind.

Australia is currently grossly underprepared for the climate challenge, with the Morrison Government throwing funding at short-term, fragmented climate adaptation measures for climate vulnerable areas like the Pacific and the Great Barrier Reef, without also implementing policies to tackle climate change. The climate threat to Australia and the Pacific has now reached a point where we must make realistic and honest plans for a climate safety net to protect people, alongside harder and faster emissions reduction. Some of our most vulnerable people, such as indigenous communities and the elderly, so far have seen little benefit from

current climate adaptation measures. We must leave no one behind, and make long-term, wide-reaching plans for climate resilience that prioritises human safety under all possible scenarios of warming.

3. Australia must make greater climate finance commitments for the Pacific

Pacific leaders have been at the forefront of spurring the world to stronger climate action. This report reveals that, to give Pacific Nations a chance of a safer climate future, wealthy nations such as Australia must make much stronger global efforts to keep global heating increases below 1.5 degrees, and also make far greater climate finance contributions to the Pacific to support them to face the climate challenges ahead. Pacific Island nations have contributed the least to the climate crisis, and yet are facing its most devastating impacts. Wealthy, high-emitting nations such as Australia must work together to develop a realistic plan and finance to support Pacific Island nations to deal with the climate impacts that they face in a world that may be 1.5 degrees warmer.