

CLIMATE ADAPTATION MISSION

PRIORITISATION SUMMIT BRIEFING

List of adaptation challenges and
prioritisation criteria

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Declarations of Conflict of Interest

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INTRODUCTION

Thank you for registering to participate in this Prioritisation Summit for the BehaviourWorks Australia Climate Adaptation Mission.

If you are reading this pack in advance of the Summit, please know that it is *optional but recommended* to do so. Reading time will be provided during the Summit itself.

During the summit, you will choose your 'top 5' Climate Adaptation challenges from the long-list of 34 challenges (see Key Reference 1, pp. 4-8) for each prioritisation criterion (see Key Reference 2, p. 9).

Also included in this document is an agenda for the Summit, and information on how we created our list of challenges.

CONTENTS

INTRODUCTION	2
SUMMIT AGENDA	3
KEY REFERENCE 1: CLIMATE ADAPTATION CHALLENGES LONG LIST	4
KEY REFERENCE 2: PRIORITISATION CRITERIA	9
HOW DID WE CREATE OUR LIST OF CHALLENGES?	10

GETTING AND STAYING INVOLVED IN THE MISSION

After the summit, you can stay involved in the Climate Adaptation Mission by:

- Signing up to receive updates about the Mission and its activities
- Joining a co-design team in early 2022 to learn about and apply behaviour science in creating 4-6 deployable behaviour change interventions
- Delivering the trial to test one of the behaviour change interventions during 2022
- Scaling up, adapting, and implementing tested interventions in 2023

BEHAVIOURWORKS AUSTRALIA AND THE CLIMATE ADAPTATION MISSION

BehaviourWorks Australia is a leading behaviour change research enterprise within Monash Sustainable Development Institute at Monash University. For 2021-2023, BehaviourWorks is leading a research collaboration between: Monash University; Sustainability Victoria; the Victorian Department of Environment, Land, Water and Planning; The Shannon Company; and the Federal Department of Agriculture, Water and the Environment as a research and innovation Climate Adaptation Mission. For more information on the Mission, visit climateadaptationbehaviour.org.

SUMMIT AGENDA

PART 1: SETTING THE SCENE	
10:00 - 10:20am AEDT	Welcome by Julie Richmond Acting Director, Climate Change (VIC DELWP)
	Introduction to the Prioritisation Summit • Overview of Climate Adaptation Mission • Where we are today: Prioritisation Summit • Goals for today
10:20 - 10:35am	BREAK OUT ROOMS for attendee introductions
10:35 - 10:50am	Briefing on the Prioritisation Task • Why prioritisation? • Long-list and criteria • About the prioritisation briefing pack
10:50 - 11:00am	BREAK
PART 2: DOING THE WORK	
11:00 - 11:20am	Reading time • Silent reading - first 10 mins (questions in chat) • Q&A and discussion - second 10 mins
11:20 - 11:50am	Prioritisation activity • Choose your top 5 challenges for each criterion through a Qualtrics survey
11:50 - 12:00pm	BREAK
PART 3: REFLECTING ON THE RESULTS	
12:00 - 12:10pm	Results of prioritisation activity • Top 10 voted challenges for each criterion, and overall
12:10 - 12:40pm	BREAK OUT ROOMS for discussion of results
12:40 - 1:00pm	Group facilitator report back on discussion • Voicing attendee endorsements, ideas and concerns • Identifying key questions and considerations for Mission partners to resolve
	Closing comments • Next steps for the Climate Adaptation Mission

KEY REFERENCE 1: CLIMATE ADAPTATION CHALLENGES LONG LIST

The left column in the below table references the challenges to be prioritised (e.g., challenge no.1 could be read as 'People with increased personal sensitivity experiencing water and food insecurity'). On the right are *examples* of that challenge that emerged in the survey or desktop review.

Environmental challenges	
<u>Water and food insecurity</u>	
1. People with increased personal sensitivity	Pregnant women, older people, and children may be disproportionately affected by risks to food and drinking water safety.
2. Communities dependent on natural resource management and natural capital	- Primary producers may be prevented from providing safe and affordable food because of extreme weather events and changes to land conditions. - Communities reliant on single sources of water are affected by reduced water quality and availability. - Tourism operators may need to shift peak season activities if water quality / availability poses risk to tourists.
3. Traditional Owners	Traditional Owners may experience a decline in local food and water quality / availability.
4. People living or working in areas with increased climate hazards	- Coastal & river communities may be challenged by reduced water quality due to seawater moving into fresh groundwater (drinking water) sources. - Emergency water supplies may be affected in bushfire-prone areas.
5. People with limited finances or assets	Low-income households may not be able to afford increasing food prices.
<u>Environmental degradation</u>	
6. Communities dependent on natural resource management and natural capital	Primary producers, conservationists, and communities dependent on eco-tourism may experience difficulties due to reduced soil and water quality, damage to natural attractions, failure of restoration projects, and weeds / pests threatening biodiversity. This also includes non-economic impacts such as reduced local amenity, wellbeing or access to non-market goods like firewood (e.g. from designated domestic collection areas).
7. Traditional Owners	Traditional Owners' country may fundamentally change (e.g., landscape, variety of species). This is exacerbated where they feel disempowered by current legislative tools that limit their ability to care for Country in the face of climate change.
8. People living or working in areas with increased climate hazards	Coastal communities may experience erosion from sea level rise and extreme weather events.

Health challenges

Injury, illness, and death

9. People living or working in areas with increased climate hazards	- Homeless individuals, tradespeople, farmers, and conservationists may experience heat stress as they live or work in places with inadequate shelter and cooling. - Agricultural communities and conservationists may experience threats to health & safety due to fires, extreme heat, floods, and worsening air quality.
10. Traditional Owners	- Traditional Owners may be affected by the spread of diseases and the increased intensity & frequency of extreme weather events. - Traditional Owners may be at greater risk of heat stress due to poor housing and / or overcrowding.
11. People with increased personal sensitivity	- Older people, children, pregnant women, and people with physical / mental health difficulties may be at greater risk of heat-related stress or death. - Children are highly susceptible to the spread of infectious diseases and worsening air quality. - Women may experience injury from family violence (as violence increases after disasters).
12. People with limited finances or assets	Low income households and young adults may lack resources to maintain and repair their housing (e.g., heating & cooling) and property (e.g., insurance), filter their air, or avoid exposure to heat, disease, or climate hazards.
13. CALD communities, migrants, and refugees	- Multicultural communities may not have access to clean, affordable, and reliable energy. - People with low English language proficiency may experience heat stress if they don't understand health advice about hot days or aren't experienced with Australia's climate.

Mental health and stress

14. Essential services	Health care, social workers, and education staff experience stress & fatigue as a result of increased workload, reduced resources, and high community expectations.
15. People with increased personal sensitivity	- Older people (especially those in low-income households) may experience mental health challenges due to inadequate building standards and lack of access to affordable solutions. - Male suicide rates may increase with heat waves.
16. Communities dependent on natural resource management and natural capital	- Primary producers may experience mental health challenges due to crop and livestock failure, threats to income, pressure from climate change narratives, and disconnect from urban communities. - Conservationists may experience mental health impacts from failed projects.
17. Traditional Owners	Traditional Owners may experience mental health challenges from fear of leaving their ancestral homes, losing identity & history, and threats to culturally significant plants and animals.
18. People with limited	People in low-income households may experience mental health challenges due to

<i>finances or assets</i>	unaffordable essentials (e.g., energy, food, water) and inadequate building standards.
<i>19. Young people</i>	Children and young people may experience eco-anxiety and mental health challenges due to not being empowered in decision-making processes and seeing increasing climate change impacts.
<i>20. People living or working in areas with increased climate hazards</i>	Rural and remote communities may experience mental health challenges (e.g., as a result of drought, under-resourced health services, extreme heat).

Socio-economic challenges

Damage or disruption to built environment and essential services

<i>21. Essential services</i>	Firefighters, health care, transport services, and businesses may be unable to deliver effective services because of demand surges, damage to infrastructure, supply chain disruptions, and inability to access clients.
<i>22. People living or working in areas with increased climate hazards</i>	Communities surrounded by vegetation, on the coast, in urban fringes, or located regionally or remotely may experience damage to the built environment (houses, roads, electricity and water infrastructure) from acute climate hazards (e.g., bushfires, flooding) and chronic hazards (e.g., inundation, erosion).
<i>23. People with limited finances or assets</i>	- Social housing residents may experience damage / loss of infrastructure or services (e.g., air-conditioning failure during extreme heat, foundation damage due to water scarcity or inundation). - Low-income households may be affected by damage to free and public amenities (e.g., libraries, parks).

Reduced or changed economic activity / foundation

<i>24. Communities dependent on natural resource management and natural capital</i>	- Agricultural communities may experience increased livestock mortality and reduced quantity & quality of crops (e.g., from dry climate, poor quality soil, changes to planting times). - Communities dependent on eco-tourism may lose visitors during peak periods due to extreme weather events and changing weather conditions affecting natural attractions (e.g., shorter snow seasons, impacts on water sports, weather-related closures).
<i>25. People living or working in areas with increased climate hazards</i>	- Areas prone to natural disasters may experience increased costs of managing & maintaining the built environment (including insurance and service provision costs). - Businesses exposed to heat may experience declines in productivity.
<i>26. People with increased personal sensitivity</i>	Women are disproportionately affected by economic pressures (e.g., employment changes) during disasters.
<i>27. People with limited finances or assets</i>	Low-income households, older people, and small businesses may lack financial support (e.g., insurance) to protect assets and health from climate-related hazards (e.g., heat waves, inundation, bushfires). Costs may limit access to energy efficient

	alternatives. • Young people dependent on casualised work may be impacted in extreme weather
<u>Loss of culturally important values, sites, or species</u>	
28. <i>Traditional Owners</i>	• Traditional Owners may experience impacts on cultural heritage, cultural values, and spiritual connection from damage to culturally significant sites and landscapes. This may impact caring for and healing Country.
29. <i>People living or working in areas with increased climate hazards</i>	• Bush-fire prone areas may experience loss of / damage to culturally significant sites from bushfire management activities. • Communities may experience loss of amenity value of the natural environment
<u>Loss of social capital, communities, or forced climate migration</u>	
30. <i>CALD communities, migrants, and refugees</i>	• Refugees resettling in urban fringes and regional areas may face further forced migration and social disruption due to areas becoming unsuitable to live and work.
31. <i>Traditional Owners</i>	• Traditional Owners may have to leave their ancestral homes due to climate hazards.
32. <i>People living or working in areas with increased climate hazards</i>	• Coastal communities may depopulate due to reduced liveability (e.g., because of damage to property, infrastructure, tourism, water quality, and other activities dependent on a stable and safe climate. • Smaller, remote communities may experience reduced quality of life (e.g., due to disconnection from support services, damage to recreation or environmental sights).
33. <i>People with increased personal sensitivity</i>	• Older adults and young people may be particularly affected by loss of public spaces (e.g., local parks, recreation venues) as they use these spaces more often. • Children and young people may experience reduced educational outcomes due to climate hazards.
34. <i>People with limited finances or assets</i>	• Low-income households in high-risk areas may be forced to relocate due to extreme weather events but may also have less resources (e.g., insurance) to do so.

FINAL LIST OF 34 CHALLENGES FROM SURVEY AND DESKTOP REVIEW

These challenges are presented in the format 'Problem: group'. Examples of these challenges are provided in the table above.

Environmental challenges

1. Water and food insecurity: People with increased personal sensitivity
2. Water and food insecurity: Communities dependent on NRM and natural capital
3. Water and food insecurity: Traditional Owners
4. Water and food insecurity: People living or working in areas with increased climate hazards
5. Water and food insecurity: People with limited finances or assets
6. Environmental degradation: Communities dependent on NRM and natural capital
7. Environmental degradation: Traditional Owners
8. Environmental degradation: People living or working in areas with increased climate hazards

Health challenges

9. Injury, illness, and death: People living or working in areas with increased climate hazards
10. Injury, illness, and death: Traditional Owners
11. Injury, illness, and death: People with increased personal sensitivity
12. Injury, illness, and death: People with limited finances or assets
13. Injury, illness, and death: CALD communities, migrants, and refugees
14. Mental health and stress: Essential services
15. Mental health and stress: People with increased personal sensitivity
16. Mental health and stress: Communities dependent on NRM and natural capital
17. Mental health and stress: Traditional Owners
18. Mental health and stress: People with limited finances or assets
19. Mental health and stress: Young people
20. Mental health and stress: People living or working in areas with increased climate hazards

Socio-economic challenges

21. Damage/disruption to built environment and essential services: Essential services
22. Damage/disruption to built environment and essential services: People live/work in areas with climate hazards
23. Damage/disruption to built environment and essential services: People with limited finances or assets
24. Reduced/changed economic activity: Communities dependent on NRM and natural capital
25. Reduced/changed economic activity: People living or working in areas with increased climate hazards
26. Reduced/changed economic activity: People with increased personal sensitivity
27. Reduced/changed economic activity: People with limited finances or assets
28. Loss of cultural values/sites/ species: Traditional Owners
29. Loss of cultural values/sites/ species: People living or working in areas with increased climate hazards
30. Loss of social capital, communities, or forced climate migration: CALD communities, migrants, and refugees
31. Loss of social capital, communities, or forced climate migration: Traditional Owners
32. Loss of social capital, communities, or forced climate migration: People live/work in areas with climate hazards
33. Loss of social capital, communities, or forced climate migration: People with increased personal sensitivity
34. Loss of social capital, communities, or forced climate migration: People with limited finances or assets

KEY REFERENCE 2: PRIORITISATION CRITERIA

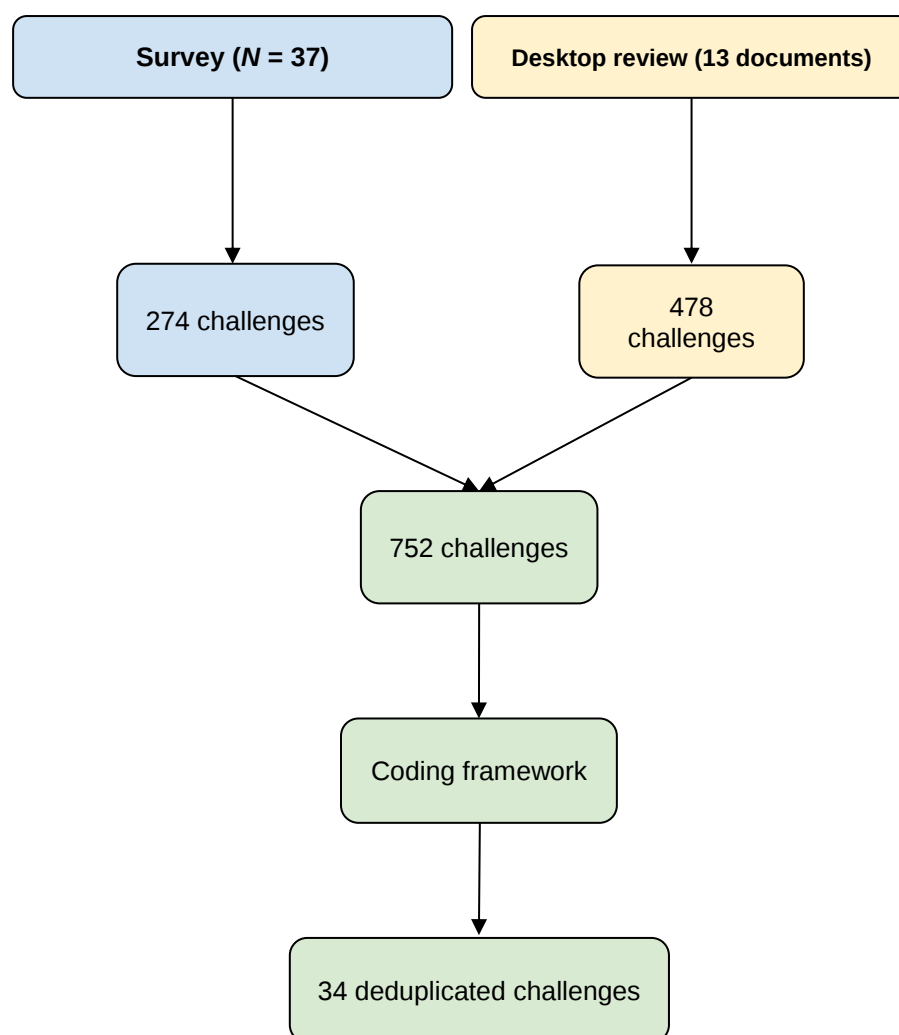
Criterion	Description	Vote for a challenge if	Don't vote for a challenge if
<u>Collective benefit</u>	Solving this problem for this group will "pay dividends" because it will help other groups solve other problems AND it does not shove the problem into another group's lap.	- It's a problem that is experienced by many other groups - It's a group who are very likely to share and apply their solutions - We are all better off if this group thrives	- There is a high risk of displacing the problem on to others - It's a really specific problem for a really specific group - It's a group who are very unlikely to share and apply their solutions
<u>Chronic impacts</u>	The group is experiencing a recurring, persistent and long-term problem that "adds up" over time.	- the problem that results from combined and long-term climate change and variability - the problem results from accumulated extreme weather or acute climate hazards	- It's a problem that results from a single event of extreme weather, disaster, or climate hazard - A group is unlikely to experience the problem more than once
<u>Scale of opportunity</u>	The problem means that the group will "miss out" on a lot of future value and wellbeing, or will cause the group a lot of suffering and harm if not addressed.	- Ignoring it risks losing significant future environmental, social, or economic value due to irreversible damage - It's a missed opportunity to "do things better" through just and sustainable development - Ignoring it risks substantial harm or suffering due to the problem (e.g., # affected x intensity of harm)	Small or trivial stakes or impacts for the affected group
<u>Transformational adaptation potential</u>	The problem that the group is experiencing needs <i>transformational adaptation</i> , where the fundamental attributes, values or goals of the impacted system must change for the group to thrive in the face of climate change and variability.	- It demands re-thinking "how things should be", "what is important", and "who makes the decisions" - The future of the group, its goals and its values are in question - The group keeps experiencing this same problem, despite all efforts - Behaviour change by itself won't solve the problem	- It's easily fixed with small tweaks or doing what we already know works, but more or better - There is a predictable positive return on investment for efforts and resources - Behaviour change by one or a few groups would largely address the problem
<u>Incremental adaptation potential</u>	The problem that the group is experiencing needs <i>incremental adaptation</i> , where an otherwise valued and functional impacted system needs "tuning up" to keep it working well for the group in the face of climate change and variability.	- Can be improved if we "paddle faster" or accelerate what we already know works - There is a predictable positive return on investment for efforts and resources - Behaviour change by one or a few groups could help address the problem	- It demands re-thinking "how things should be", "what is important", and "who makes the decisions" - The future of the group, its goals and its values are in question - The group keeps experiencing this same problem, despite all efforts - Behaviour change might not help much

HOW DID WE CREATE OUR LIST OF CHALLENGES?

COLLECTING THE CHALLENGES

The challenges presented at this summit were informed by a survey of 37 stakeholders with experience or expertise in climate change adaptation, and a desktop review of 13 existing climate adaptation plans, strategies, and reports.

The figure summarises the process and the number of challenges extracted at each stage.



SURVEY OF STAKEHOLDERS WITH EXPERIENCE OR EXPERTISE IN CLIMATE CHANGE ADAPTATION

We used professional networks including Climate Adaptation Mission partners to identify people with experience or expertise in climate change adaptation. We invited these people to online webinars where we introduced the survey and asked them to generate climate adaptation challenges. We also created recordings of the webinar and shared it via email. Survey participants were asked

WHO is experiencing WHAT challenge as a consequence of climate change?

Information about the people who completed the survey is provided in the table.

Measure	Percentage
Gender	
Woman	75%
Man	22%
Prefer not to answer	3%
State	
Victoria	49%
New South Wales	14%
Queensland	11%
Western Australia	11%
Tasmania	8%
South Australia	5%
Australian Capital Territory	3%
Northern Territory	0%
Aboriginal and or Torres Strait Islander	
Aboriginal	0%
Torres Strait Islander	0%
No	100%
Culturally and linguistically diverse group	
Yes	5%
No	95%
Organisation type	
Local government	5%
Non-government organisation or not-for-profit	43%
Peak business or industry group	3%
State government	38%
University or research institute	11%
Geographical focus of work	
Rural	35%
Major city	19%
My work does not have a geographical focus	19%
Regional city or town	3%
Other (please specify)	22%

DESKTOP REVIEW OF EXISTING CLIMATE ADAPTATION PLANS, STRATEGIES AND REPORTS

The challenges presented at the summit were also informed by a desktop review of a set of six regional adaptation strategies, and seven sectoral adaptation action plans, both for Victoria. Both sets are the result of extensive engagement and supporting research. Regional strategies were developed in a bottom up process in each region, with local adaptation committees steering the process. Action plans were developed in consultation with key stakeholders representing the relevant sectors.

Challenges were extracted by a team of three reviewers using a shared coding framework. The coding framework detailed a range of populations, climate impacts, and climate stressors, and was developed in consultation with subject matter experts and policy leads from mission partners initially as part of the scoping discussion paper, and further developed for the current desktop review. For further refinement of the coding framework we integrated a climate hazard taxonomy by Arup (2015) and a framework developed by the Global Health Alliance Australia (2019) with the initial co-developed framework. During the coding process, additional impacts, populations and stressors were identified and added to the coding framework to ensure no important themes were missed.

The framework allowed us to extract statements of the form of:

WHO (population) is experiencing WHAT challenge (impact) as a consequence of climate change REASON (stressor(s))?

As a result of this process, a total of 478 challenges were collected by the desktop review.

CODING AND DEDUPLICATING THE CHALLENGES

The coding framework, which captures WHO (population) and WHAT (problem) was developed by:

- Consulting subject matter experts and policy leads from mission partners (DAWE, DELWP, SV, and TSC);
- Integrating other frameworks such as a climate hazard taxonomy by Arup (2015)¹ and a framework developed by the Global Health Alliance Australia (2019)²;
- Adapting the framework during coding to ensure that important themes were not missed;
- Simplifying the framework to reduce the number of deduplicated challenges.

The 752 survey and desktop review challenges were integrated by the research team. Duplicates were identified and removed. For both populations, and impacts/problems individual statements were combined where related, and aggregated to the maximum scale where a clear challenge relating to people and problems were a) still discernible and could be meaningfully prioritised in the judgement of the reviewers and b) subsidiary detail could still be tracked and explored for any challenges prioritised into the next phases of the project. Particular attention was paid to attempting to group 'like' challenges and populations. Following coding, challenges were deduplicated at the level of population and problem, resulting in 34 challenges to be prioritised at the summit

¹ Arup (2015), City climate hazard taxonomy.
<https://www.arup.com/perspectives/publications/research/section/city-climate-hazard-taxonomy>

² Global Health Alliance Australia (2019, July). From Tuvalu to Townsville: Climate Change Impacts on Health in Australia and the Asia Pacific. Policy advice for Governments in Australia.
https://ausglobalhealth.org/wp-content/uploads/GLHAA_TownsvilleTuvalu-08.pdf

LIMITATIONS AND CAVEATS

While this prioritisation process draws on and adapts best practice in prioritisation science³, and is a significant improvement upon less rigorous and transparent methods of choosing challenges, it has several limitations. These include (but are not limited to):

- Reducing the challenges to a feasible length (in our case, 34) requires making trade-offs and sacrificing nuance. To achieve this, we had to simplify our coding framework, categorise populations and problems under the most relevant category (even if it wasn't a perfect fit), and choose which examples to include (and exclude) in this summit pack. Note that for the prioritised challenges at least, later stages of the project will start by 'unpacking' some of the detail as part of the co-design process, returning some of the nuance and complexity.
- Our list of challenges was dependent on those proposed by our survey sample and in the desktop review documents. Whilst we tried to capture a diverse range of survey responses and add further challenges with our desktop review (themselves based on extensive engagement and research), it is possible that we have missed some challenges that could be on our list.
- Both our desktop review and survey respondents better represent the southern half of Australia (as noted above), and it's likely that challenges more unique to northern Australia and the rest of the world are not represented.

CHALLENGES NOT INCLUDED

Examples from Impacts on natural environment excluding humans

- Freshwater plants and animals may experience decreased freshwater quality and quantity. Some environmental systems may be threatened by water requirements.
- Landscapes and biodiversity may be threatened due to loss of habitat, changing weather, disruption to food or water supply of animals, and the success of invasive species. This may cause extinction or migration of species.
- The natural environment may be affected by damage to the built environment, such as the loss of infrastructure required to maintain national parks, recreation facilities, and heritage landscapes

Exclusion rationale: The above items were felt to be less directly relevant to the mission focus as they did not directly include an impacted human population, and would at least be indicated in challenges that flow from them to impact human populations.

Examples from Barriers to adaptation action and planning

- Decision makers in private organisations are unable to make decisions on adaptation due to inability to translate it into economic assessments.
- Businesses, organisations and sectors may need to gather data about what parts of their organisations are at risk or exposed. They will need to access and interpret data on climate risks, the financial or non-financial consequences, and the costs/ benefits of potential adaptation measures.

³ Adem Esmail, B., & Geneletti, D. (2018). Multi-criteria decision analysis for nature conservation: A review of 20 years of applications. *Methods in Ecology and Evolution*. doi: [10.1111/2041-210X.12899](https://doi.org/10.1111/2041-210X.12899)
Bragge, P., Horvat, L., McJinlay, L., Borg, K., Macleod-Smith, B., & Wright, B. (2021). From policy to practice: prioritizing person-centred healthcare actions in the state of Victoria. *Health Research Policy and Systems*. doi: [10.1186/s12961-021-00782-2](https://doi.org/10.1186/s12961-021-00782-2)

- Regional communities and emergency services need to improve their ability review and learn after emergencies identify vulnerabilities, building resilience

Exclusion rationale: These items did not fit our coding framework for “reason” (climate stressor), and will be well covered in later co-design for any prioritised challenges.