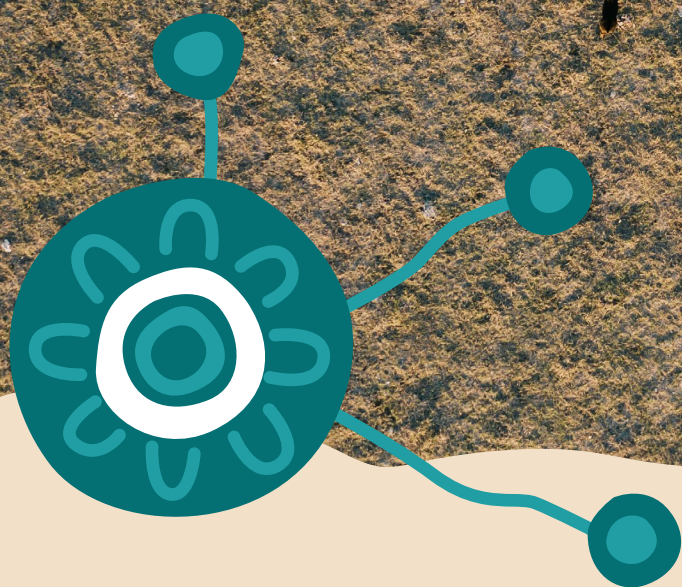




From Research to Impact: Delivering practical outcomes through research engagement

A guidebook for climate risk and
environmental health researchers,
policymakers, and practitioners



Contact

Healthy Environments And Lives

P: +61 2 6206 5131

E: heal@canberra.edu.au

healnetwork.org.au

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3 Acknowledgement of Country

4 Healthy Environments and Lives respectfully acknowledges the
7 Traditional Custodians of the many
9 lands that we work on throughout Australia.

10 We recognise their culture and
10 connection to the land and waters,
and pay our respects to Elders past,
present and emerging.

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The HEAL update was developed by Mira Cooper-Beknazarova and Jingyi Shao, under the leadership of Yonatal Tefera, Mija Coad, and Carmel Williams from the Centre for Health in All Policies Research Translation.

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Summary

This guidebook is a resource for integrating knowledge translation and engagement in research. It contains information, tools, and templates to guide researchers on how to engage stakeholders and use knowledge translation to increase the relevance, usefulness, and impact of research.

Created for Healthy Environments and Lives (HEAL) Network, this guidebook has been developed for early and mid-career researchers in climate risk and environmental health field within and beyond the HEAL Network. This guidebook is primarily written from a researcher's perspective, but policymakers and practitioners may find it helpful when engaging with researchers. For more on how it was developed, see the summary below.

The guidebook draws upon the principles established for the National Health and Medical Research Council (NHMRC) funded HEAL Network, which focused on healthy environments and climate-health research, knowledge exchange and translation into policy and practice to bring measurable improvements to community health, the health system, and the environment. The HEAL Research Translation, Implementation and Impact Strategy, developed by the Research Translation and Impact Standing Committee, has outlined key concepts, guiding principles, strategies and proposed actions to support effective knowledge translation and implementation across the HEAL Network (Lyne et al., 2023). These guiding principles note the importance for new research to not only address empirical gaps, but also to ensure that new research is:

- designed for relevance and impact
- represents key populations and stakeholders
- is participatory and collaborative
- promotes equity
- reflects on and monitors process and impact.

You don't have to read the whole guidebook to get started on improving knowledge translation and engagement in your research. You can work through the different sections and elements at your own pace. If you're familiar with this topic, you might want to jump straight into the checklists and templates: you can do this by working through the five elements for knowledge translation below.

If you're new to knowledge translation and research engagement, start at the beginning and then move to five elements. No matter how you use this guide, remember that it's never too late to begin using knowledge translation strategies in your research!

You can learn more about the HEAL vision, principles and impacts at www.healnetwork.org.au

More details about the HEAL Research Translation, Implementation and Impact Strategy can be found at www.mdpi.com/1660-4601/20/14/6383

Introduction: Context and purpose of this guide

This knowledge translation guide was adapted from the Office of Ageing Well Guidebook which was co-designed alongside Ageing Well researchers (Pettman et al., 2025). This guidebook aims to support integration of knowledge translation in environmental change and health research. It provides information and case studies that are relevant to all early and mid-career researchers in environmental change and health research – to support planning, development, and implementation of strategies that can increase the relevance, usefulness and impact of research. The audience for this guidebook is not limited to Australian researchers within the HEAL Network. International researchers working on knowledge translation in the climate risk and environmental health sectors may also find it helpful.

HEAL Network

The HEAL Network is funded by NHMRC Special Initiative in Human Health and Environmental Change (\$10 million for 2022-2027). It is a broad coalition of 100 investigators and more than 30 organisations from across Australia that aims to bridge the gap between knowledge and action by bringing together Aboriginal and Torres Strait Islander wisdom, sustainable development, epidemiology, and data science and communication to address environmental and climate change and its impacts on health across all Australian states and territories. The vision of the HEAL Network is to catalyse research, knowledge exchange, and translation into policy and practice that delivers measurable improvements in population health, the Australian health system, and the environment. To support this vision and strengthen knowledge translation across the Network, HEAL has undertaken a wide range of activities and supported multiple initiatives.

Knowledge translation within the HEAL Network is primarily facilitated through the Research Translation and Impact Standing Committee, which includes members from HEAL partner academic institutions as well as policy actors. In 2023, the Committee developed the HEAL Research Translation, Implementation and Impact Strategy (Lyne et al., 2023), which sets out the guiding principles, priority actions, and monitoring and evaluation mechanisms required to support effective knowledge translation across the Network.

Several projects have since emerged to support implementation of the Strategy, led by the Research Translation and Impact Standing Committee. These include:

- Experiences of Knowledge Translation and Impact: a survey of HEAL Network researchers and partners.
- A HEAL Network case study compendium showcasing a collection of successful research-to-policy translation case studies (CHiAPRT, 2025).
- A network analysis project mapping research translation and interdisciplinary collaboration across the HEAL Network.

In addition, the HEAL Network has participated in a number of collaborative initiatives, including:

- Leading a national academic review of Australian research on climate change and health interventions, undertaken in close collaboration with the Australian Government Department of Health and aligned with action items in the National Climate and Health Strategy;
- A health impact assessment project in collaboration with the Victorian EPA; and
- Multiple submissions to government policy consultations, which are publicly available on the HEAL Network website.

The development of this guidebook further demonstrates the HEAL Network's ongoing commitment to research translation. The guidebook aims to support HEAL researchers by providing practical guidance on developing and embedding knowledge translation strategies within the research projects they lead.

Climate change

Climate change is likely to be the biggest health threat of the 21st century, affecting public health and wellbeing by increasing the frequency and intensity of environmental disasters such as wildfires, heatwaves, floods, tropical cyclones, droughts and other extreme weather events (Costello et al., 2009 & Smith et al., 2022). Approximately 3.3 to 3.6 billion people live in highly vulnerable areas to climate impacts, with about 250 000 deaths per year attributed to climate change-related malaria, diarrhoea and heat stress alone during 2030-2050 (IPCC 2023 & WHO 2023). The Australia's National Climate Risk Assessment expected an increased climate risk to health and social support system from moderate to severe by 2050. It estimated 444% and 423% increased heat-related mortality in Sydney and Darwin respectively under a +3°C future scenario compared to the current situation (Australian Climate Service, 2025). In response, the National Health and Climate Strategy was established by Australian Department of Health and Aged Care to address the health and wellbeing impacts of climate change through evidence-based policy making (Australian Department of Health and Aged Care, 2023).

Knowledge from research evidence can have the potential to influence policy, practice, and community action to enhance adaptation and mitigation efforts to maximise health, wellbeing and life outcomes in a warming climate. Therefore, this knowledge translation guidebook was developed based on the Office for Ageing Well Guidebook (Pettman et al., 2025)) and HEAL Research Translation, Implementation and Impact Strategy (Lyne et al., 2023), with the aim of supporting researchers working on climate change and health impacts to plan and implement effective knowledge translation that delivers on the ground change.



Knowledge translation and research engagement

Why do we need to engage, 'translate', or co-produce knowledge?

To ensure that policies, programs and services contribute to improvements to environment, human health and wellbeing (and do not cause harm), they should be informed by best available evidence. Evidence may be generated from research, from practice wisdom, or from people's lived experience.

However, the creation of knowledge alone does not lead to implementation of that knowledge. When new knowledge from research becomes available, there can be a considerable time lag before it is used to inform practice or policy. This is sometimes referred to as the 'know-do' gap (the gap between what we know through research, and what we do in practice). There might be multiple barriers that hinder effective and efficient knowledge transfer. These can include cultural differences between researchers and decision makers and other involved groups, institutional constraints within decision-making bodies and academic institutions, scientific outputs that are not tailored to decision-makers, and a misalignment between research design and real-world information needs (Cvitanovic et al., 2016). To overcome these barriers, Cvitanovic et al (2016) recommend focusing on stakeholder engagement from a research planning stage. As such, ideally, knowledge is co-produced with the stakeholders and communities that it aims to serve and is actively disseminated and implemented to inform decisions or practice. The field of knowledge translation has emerged to provide strategies to bridge these gaps.

Value of research engagement

Whether you're a researcher wanting to engage with external stakeholders, or a policy decision-maker or practitioner wanting to engage with researchers, this engagement requires time and resources, notably for activities like identifying shared priorities, developing relationships, coordinating meetings, maintaining communications, and developing tools and resources. Due to the constraints of research funding, systems, and performance metrics for research in Australia and in universities, researchers often have fewer drivers for engagement compared to policy makers (Jessani et al., 2020). Each individual or organisation that considers

investing time and resources in engagement activities is constrained and incentivised in different ways through different processes (Dunleavy & Tinkler, 2021; Oliver et al., 2022; Smith & Stewart, 2017).

Further, different participants may not share the same aim/goal in engagement, even if taking part in the same activity. It may be challenging to identify 'co-benefits' or shared goals, despite having similar interests across institutional boundaries. Ultimately, each participant will likely participate in a way that benefits their own/ organisations' interests most. Tensions may arise due to complexities in the research process, or in stakeholder organisations' contexts. For example, when research output does not support a desired policy priority, or is not produced in a timely manner, or, when priorities and staff change in stakeholder organisations.

Despite the structural challenges, drivers of research-policy-practice engagement for researchers might include:

- Research impact (individual or collective) is more likely to be generated through increased external engagement (for ideas on assessing research impact, see Element 5: Evaluate your engagement and impact). While environmental/health/community benefit is an outcome of itself, research impact can also help to fulfil academic missions of the individual/team or institution.
- Increased funding opportunities: Australian research funders are increasingly requesting evidence of policy/industry engagement and environmental or health impact of research beyond the academy. Gradually, research engagement is becoming more acknowledged and rewarded through strategic research funding and awards (both of which contribute to future funding opportunities).
- Academic reputation can be strengthened through engaging with external stakeholders through increased awareness of research and building of reputation. This can lead to invitations to collaborate, serve on advisory boards, and even contribute to academic promotions.
- Access to data and resources is enabled through external stakeholder partnerships, which can enrich research projects, expand recruitment opportunities, and enable deeper and more relevant insights to be generated.

Recent evidence on this topic notes a variety of benefits of research engagement/ knowledge translation (Lawrence et al., 2019), some of which may represent 'co-benefits' (shared benefits for more than one participant group):

- ensuring research is relevant to stakeholders and enhancing the sharing and use of findings
- enhancing methodological feasibility
- building partnerships for future collaborations

Drivers for knowledge translation/research engagement for policy actors and practitioners might include:

- Public value: Decision-makers and policy actors may seek to 'pull' research into their programs and strategy to increase effectiveness or public value.
- Strategy: Engagement with research and researchers may help to understand a policy problem through different narratives and framings.

The national HEAL network is an example of a strategic approach to identifying and addressing research questions of policy importance through research engagement. While HEAL researchers are addressing climate and global change issues like water shortage, biodiversity loss, bushfire risk or antimicrobial resistance (AMR), they also build collaborative partnerships with stakeholders including industries, policy-makers, Aboriginal Leaders and community members as shown by the examples of HEAL-affiliated projects (CHiAPRT, 2025). For example, in his study Hanigan et al. (2025) showcased the successful implementation of a collaborative workshop and co-designing approach to produce and show the data, that was then used by local governments to develop policies. Another example is CRC SAAFE (Solving Antimicrobial resistance in Agribusiness, Food and Environments) consortium that provides a strong example of integrating governance

and stakeholder engagement through co-designed research and embedding industry and policy partners in decision-making, which supports effective knowledge translation into practice. They did it by including board and leadership representatives from across different bodies including universities, government agencies and industry partners ensuring balanced decision-making across sectors affected by AMR. They had their industry and government partners involved from the onset of projects in defining research questions and shaping project design.

Recent evidence on this topic notes a variety of benefits of research engagement/ knowledge translation (Lawrence et al., 2019), some of which may represent 'co-benefits' (shared benefits for more than one participant group):

- ensuring research is relevant to stakeholders and enhancing the sharing and use of findings
- enhancing methodological feasibility
- building partnerships for future collaborations
- fostering ownership over knowledge creation
- overcoming differences to better understand each other's constraints and areas of interest.

Further to the importance of stakeholder engagement, trust is the critical precondition for successful knowledge exchange. It has been identified that trust is required on three levels including trust in individuals, trust in the organisation, and trust in the process of knowledge generation (Cvitanovic et al., 2021). In their study, Cvitanovic et al (2021) identified different strategies to build trust that included the need for transparency, importance to avoid advocating a particular outcome, establishing clear processes for generating and sharing advice, maintaining regular engagement and demonstrating independence.

The dos and don'ts of engaging with policy makers by Oliver and Cairney (2019).

DO

- > Produce high-quality research that is relevant, readable, and aligned with policy needs.
- > Learn how policy processes work and engage regularly, flexibly, and respectfully with policymakers.
- > Build relationships and be clear about your role (honest broker vs advocate).
- > Be proactive and reflect regularly on whether your engagement is effective.

DON'T

- > Assume engagement is straightforward or "common sense" without understanding the complexities of policymaking.
- > Engage without thinking critically about your goals, role, and whether your approach is working

What is knowledge translation?

Knowledge translation is an iterative, relational process to co-produce and exchange knowledge, offering methods to bridge the 'know-do' gap. Knowledge translation actions aim to optimise the meaningful consideration of research evidence alongside other forms of evidence, and may be targeted at practice, research, or systems (Colquhoun et al., 2014). For HEAL network members, relevant stakeholders and community members knowledge translation means the types of actions or strategies that can be used to ensure that knowledge generated from research funding can inform policy, practice, and contribute to better environmental and health outcomes.

Knowledge translation may be referred to as research translation, among other terms¹, and has been defined in various ways. Terminology used throughout this guide is described in Appendix A: Glossary of terminology. A common definition of knowledge translation adopted by the National Health and Medical Research Council (NHMRC), the World Health Organization (WHO) and Canadian Institutes of Health Research (CIHR) is:

A dynamic and iterative process that includes synthesis, dissemination, exchange, and ethically- sound application of knowledge by relevant stakeholders, to accelerate the benefits of global and local innovation in strengthening health systems and improving people's health.

This process takes place within a complex system of interactions between researchers and knowledge users which may vary in intensity, complexity and level of engagement depending on the nature of the research and the findings as well as the needs of the particular knowledge user.

(Canadian Institutes of Health Research, 2012; National Health and Medical Research Council, n.d.; Straus et al., 2009; World Health Organization Geneva, 2005).

Knowledge translation is not a one-way linear transfer of information from research to policy and practice, and it is not the same as simple dissemination.

¹ Knowledge translation has similarities to other commonly-used concepts and approaches such as 'research translation', 'knowledge transfer', 'knowledge exchange', 'knowledge mobilisation' and 'research implementation', among others.

Approaches to knowledge translation

Two broad knowledge translation approaches have been identified – integrated knowledge translation and end-of-grant knowledge translation. End-of-grant knowledge translation is a traditional business as usual process. For example, in traditional knowledge translation, researchers rely on publishing papers and conference presentations that would be then used by research communities. In integrated approaches to knowledge translation, stakeholders (people/organisations who can use the research in practice or policy) are engaged in the entire research process, and researchers meaningfully partner with these stakeholders and potential knowledge users to co-produce knowledge (Canadian Institutes of Health Research, 2012; Kothari et al., 2017). Ideally, this involves partners being involved from conception and throughout (Straus et al., 2013). This approach is more likely to produce research that is directly relevant to and used by stakeholders (Canadian Institutes of Health Research, 2012). This guidebook focuses on integrated knowledge translation, and, on the first component of the Knowledge to Action process – creation of useful, relevant knowledge.

A multitude of knowledge translation theories and frameworks exist, due to a large amount of knowledge translation-related research activity that has emerged over the past few decades. Frameworks and guides have proliferated, aiming to assist researchers (and research co-producers, policy actors, and practitioners) in the creation and translation of research (Milat & Li, 2017). Theories and frameworks are not covered in this guidebook, except to acknowledge one of the most commonly applied frameworks, the Knowledge to Action process (Graham et al., 2006), that has been adopted by several research funding agencies, including the NHMRC (National Health and Medical Research Council, 2022) and CIHR (Canadian Institutes of Health Research, 2012).

This process has two key components: the first is on the creation of knowledge to ensure its relevance and usefulness – in which researchers can take an integrated, partnership approach (e.g. collaboratively developing research questions, engaging with stakeholders in research activities); the second is an action cycle including a range of activities that are needed for knowledge implementation, carried out in an iterative way with partners and stakeholders.

Types of knowledge translation strategies

There are many practical knowledge translation interventions, actions and strategies (hereafter referred to as ‘strategies’) available, again in response to increased research and evaluation related to knowledge translation. These can be broadly categorised as:

- **Push:** researcher-driven publications, reports, evidence summaries, access to tools and resources, end-of-grant dissemination
- **Pull:** policy-/practice- driven requests for knowledge/ research, training in research use, employment of knowledge brokers
- **Exchange:** mutually-driven reciprocal relationships or partnership/collaborative research projects, research priority setting processes, deliberative dialogues, participatory action research, and other integrated knowledge translation efforts. These may also involve a knowledge broker role to facilitate partnership development and exchange.

This guidebook is focused on supporting researchers in moving to use the exchange strategy, which is a way of operationalising an integrated knowledge translation approach.

An integrated knowledge translation approach may include multiple individual methods or tools (e.g. knowledge brokering, training, incentives, and policy partnerships or advisory boards) (Lavis, 2006; Toomey et al., 2022).

Knowledge translation/ Research engagement planning

Planning for knowledge translation and research engagement is important because it can help you reach your research impact goals.

Planning for integrating knowledge translation into research can be challenging within existing resourcing and funding cycles. Planning and implementing knowledge translation involves a commitment among all partners (research producers and stakeholders) to build the capability and culture for research-policy-practice engagement and research impact. However, there are many practical ways to incorporate knowledge translation strategies into research that do not require significant resources or time.

Various knowledge translation tools are available to support knowledge translation planning and action. The next section of this guidebook provides a five-step knowledge translation planning process that you can use and adapt for your own purpose.

The following knowledge translation plan guide is intended to be used for knowledge translation planning, in particular for HEAL-supported research projects and the broader research community inside and outside Australia.

Five elements for knowledge translation planning

Refer to page 41: Knowledge Translation Plan Workbook for a practical book of templates to action the following five elements of knowledge translation planning:

1. **Define your knowledge translation goals (purpose)**
2. **Stakeholder identification, prioritisation, engagement, and management**
3. **Knowledge translation strategies**
4. **Develop a communication plan**
5. **Evaluate your engagement and impact**

When creating a knowledge translation plan, these processes will likely be non-linear, and you will be working iteratively through these steps, stepping in and out as appropriate to your work and stakeholders, or following a different sequence.

Creating a knowledge translation plan including all these elements is a great start. Building trust in stakeholder relationships is a long-term venture, so identifying and enacting all of these elements may take some time. Don't be discouraged!

When creating a knowledge translation plan, these processes will likely be non-linear, and you will be working iteratively through these steps, stepping in and out as appropriate to your work and stakeholders, or following a different sequence.

Creating a knowledge translation plan including all these elements is a great start. Building trust in stakeholder relationships is a long-term venture, so identifying and enacting all of these elements may take some time. Don't be discouraged!

Element 1: Define your knowledge translation goals

Begin by describing what you would like to accomplish through doing knowledge translation.

Knowledge translation goal-setting is distinct from your research goals (aims and objectives). Knowledge translation goals are long-term outcome aims, which may take many years to achieve or to have a meaningful contribution. As such, they may not be achieved within the life of a research project and must be considered as a non-measurable outcome.

Consider these questions:

- What is your purpose or reason for doing knowledge translation?
- What type of impact do you want your research to have?

To reflect on what type of impact you want your research to have, you might consider the types of changes that you would like to accomplish. Some examples include:

- > Advance knowledge
- > Build capacity
- > Inform decision-making/policy/practice
- > Service and system change
- > Economic change
- > Environmental change
- > Societal change

(Adam et al., 2018; Banzi et al., 2011; Canadian Academy of Health Sciences, 2009; Greenhalgh et al., 2016; Kuruvilla et al., 2006).

Considering these questions and setting knowledge translation goals will better prepare you to develop a knowledge translation plan. It also helps to consider co-benefits of research engagement – this is important to maintain engagement and increase the chance of research impact.

Some examples of knowledge translation goals are provided in Table 1, and the Knowledge Translation Plan Workbook can be used to create your own project-specific goals. If you haven't got a current topic or research area ready for knowledge translation goal-setting, you might prefer a more pragmatic approach to consider where your research could have a role in future developments, discovery or impact. One technique is referred to as 'horizon scanning'.

Another practical and simple technique is a Strengths, Opportunities, Aspirations, and Results (SOAR) analysis:



Strengths

What can we
build on?

Opportunities

What needs
are unmet or
changing?

Aspirations

What future
state do we want?

Results

How will we
know when we
are succeeding?

TABLE 1: Examples of knowledge translation goals

Advance knowledge	• Establish if community-based monitoring (citizen science) can accurately assess local climate-related health risks (i.e. heat exposure, water contamination, poor air quality, algal bloom) • Generate evidence on how climate-induced changes such as rising temperature, bushfire smoke or biodiversity loss disproportionately affect vulnerable populations • Provide evidence on the potential compounding impacts of combined exposure to multiple hazards, such as air pollution and heat co-exposures.
Build capacity	• Co-design tools and resources with communities to strengthen local adaptation strategies for heatwaves, poor air quality and other extreme weather events • Develop training modules for health and environmental practitioners on climate-informed public health responses • Use evidence from the pilot project to put together a grant bid to continue the project
Inform decision-making	• Provide evidence for the effectiveness of Interventions for reducing exposure to air pollution from bush fires • Produce evidence-based recommendations to guide state and local government in climate-related and health policies, such as improved heat planning, urban greening, safe water use (safe use of harvested rainwater) • Support health departments, EPA with data to integrate environmental surveillance (air, water, biodiversity) into public health early-warning systems • Translate research findings to inform infrastructure and urban planning such as sustainable urban design and parklands, climate-resilient housing, rainwater safety guidelines • Inform effective active transport promotion strategies by identifying the most impactful mechanisms across diverse contexts
Service or system change	• Trial community-led (citizen science) environmental monitoring platforms (i.e. heat sensors, air quality trackers, rainwater testing/evaluating) for integration into public health services • Implement localised climate-health communication systems to alert communities to environmental hazards (heat, smoke, floods, algal bloom) • Embed multisectoral principles (e.g. HiAP, One Health) into health and environmental management frameworks
Economic change	• Demonstrate the economic value of preventive climate-health measures (i.e. green infrastructure, heat mitigation strategies, improved water quality management, use of alternative water sources (i.e. rainwater, recycled water)) • Quantify health system cost savings associated with reducing exposure to climate-sensitive diseases (i.e. vector-borne diseases, respiratory conditions) • Estimate the avoidable health and economic costs associated with combined exposure to multiple hazards, such as air pollution and heat (e.g. bushfires occurring during heatwave days) • Estimate the avoidable health and economic costs associated with combined exposure to multiple hazards, such as air pollution and heat (e.g. bushfires occurring during heatwave days)
Environmental change	• Improve water, air and soil quality through evidence-informed interventions (i.e. safer rainwater harvesting and use, pollutant reduction strategies, urban greening) • Support habitat restoration and biodiversity initiatives that reduce pathogen spillover and enhance ecosystem resilience
Societal change	• Increase community awareness of the health impacts of climate change through campaigns, workshops, social media engagement, co-designed outreach and participatory research (citizen science) • Strengthen public understanding of environmental health behaviours, such as heat safety practices, vector-borne disease prevention and safe water use • Advance environmental justice by supporting culturally informed health and climate resilience strategies integrating Indigenous knowledge

Element 2: Stakeholder identification, prioritisation, engagement and management

'Relationship first, then business'. This expression of advice is common among many cultures in the world, emphasising the importance of trusted relationships for business integrity. This also applies to research, where the ultimate ambition is to generate research findings and outputs that create meaningful and positive changes within society. This can only be achieved through engagement of stakeholders in the process and outcomes of research.

A stakeholder is any individual, group, or organisation with a direct or indirect interest (a stake) in the success of your research. Their interest often aligns with an organisation delivering intended results/ meeting strategic or financial objectives.

Stakeholders may be your agents of change – they often have the ability to influence actions, decisions, and policies to achieve desired outcomes (remember your knowledge translation goals) – this may also include community members and Indigenous People. Stakeholders may be internal to your organisation, but in this guidebook, we are principally focused on external stakeholders.

Who to engage?

Checklist: Stakeholders to engage in your research

- Relevant interests related to the topic/issue/proposal
- Positions (for or against) the topic/issue/proposal
- Knowledge of the topic/issue/ proposal
- Potential alliances with other stakeholders (including networks)
- Power or Influence, vs Interest
- Ability to affect the policy/practice process through power or leadership (formal/informal)
- Ability to act on the knowledge or influence others to act

*Note: In this guidebook, 'stakeholders' is used primarily to refer to individuals and organisations from policy, practice, or service settings. Community/civil society engagement is equally important in research and should be considered in stakeholder identification. For example, stakeholders might include people with lived experience of climate-related health impacts, Indigenous knowledge holders, environmental practitioners, local community organisations involved in environmental monitoring and public health initiatives or residents involved as participants in relevant research.

If community members are one of your key stakeholder groups, be sure to follow relevant guidance and principles for community participation, co-production, and empowerment in research (Boaz et al., 2018). In one of the HEAL-supported projects led by the Adelaide University (previously University of South Australia) investigating the quality of harvested rainwater in residential settings, households with rainwater tanks were key stakeholders. They played an essential role in data collection by sampling their rainwater and completing an online survey, and were regularly updated as the project generated relevant findings. A key challenge, however, was identifying and engaging the stakeholders who could potentially influence decision-making, i.e. policymakers. This project highlighted the importance of more systematic stakeholder mapping during a project development stage and in future, greater emphasis will be placed on early and thorough stakeholder analysis to strengthen research translation and impact.

Another example is an ARC Linkage project co-led by the University of Sydney and HEAL, in partnership with Transport for NSW. This project aims to co-design a robust evaluation framework for active transport policies, embedding knowledge translation strategies across planning, knowledge generation, co-production, and implementation stages. The main stakeholders include transport and urban planners, consultants, public health practitioners, active travel and health advocates, active travel users and non-users, and researchers from the transport, planning and health sectors. Stakeholders were systematically identified and prioritised based on their interest in and influence on active travel policy implementation. The research team holds regular meetings with the Transport for NSW team, which function as a partnership and governance-level knowledge translation strategy to support shared decision-making, ongoing feedback, and alignment with policy priorities. Stakeholders were involved in online surveys, focus groups, online interviews, and face-to-face workshops to support two-way knowledge exchange. These activities were used to identify the key barriers and enablers to active travel policy implementation and co-design the evaluation framework. Stakeholders' inputs are directly translated into research outputs, informing the identification of key contextual factors, mechanisms, and outcomes that underpin the evaluation framework. A report will be provided to Transport for NSW, supporting the uptake of research evidence to inform future active travel planning and investments.

Co-partnered with the HEAL network, SAAFE CRC is a collaborative centre that aims to tackle AMR issue. AMR threat runs across different areas and disciplines including agriculture, food industry, public health emphasising the importance of One Health approach.

SAAFE brings together stakeholders from across food and agribusiness industries, environmental management sectors, government agencies and leading national and international research organisations to combine the efforts in understanding, managing and mitigating the risks posed by AMR. Each of the stakeholders have equal interest and different power but together they work collaboratively towards common goals and aims. As described earlier (p. 21), CRC SAAFE is a great example of knowledge translation by incorporating structured governance and engaging stakeholders from early stages of project development.

How to engage? Tools and templates for stakeholder identification and analysis

Begin with stakeholder identification, which is a way of brainstorming to define whose interests should be taken into account (therefore who you should engage) when developing your research. Work through the checklist on previous page 'Stakeholders to engage

in your research' to identify and define stakeholders for your research. Stakeholder analysis is a process of systematically gathering and analysing qualitative information about key stakeholders.

Once you have identified or defined a list of possible stakeholders, you can then do further analysis to:

- Understand where they 'stand' – interests, position
- Identify influencing factors
- Map and prioritise stakeholders – on a matrix
- Select strategies for engagement
- Develop strategies to mitigate risks to your project.

A stakeholder analysis matrix is provided in Figure 1, and a blank template is available in the Knowledge Translation Plan Workbook .

FIGURE 1: Stakeholder analysis matrix



Deciding who to involve: prioritisation

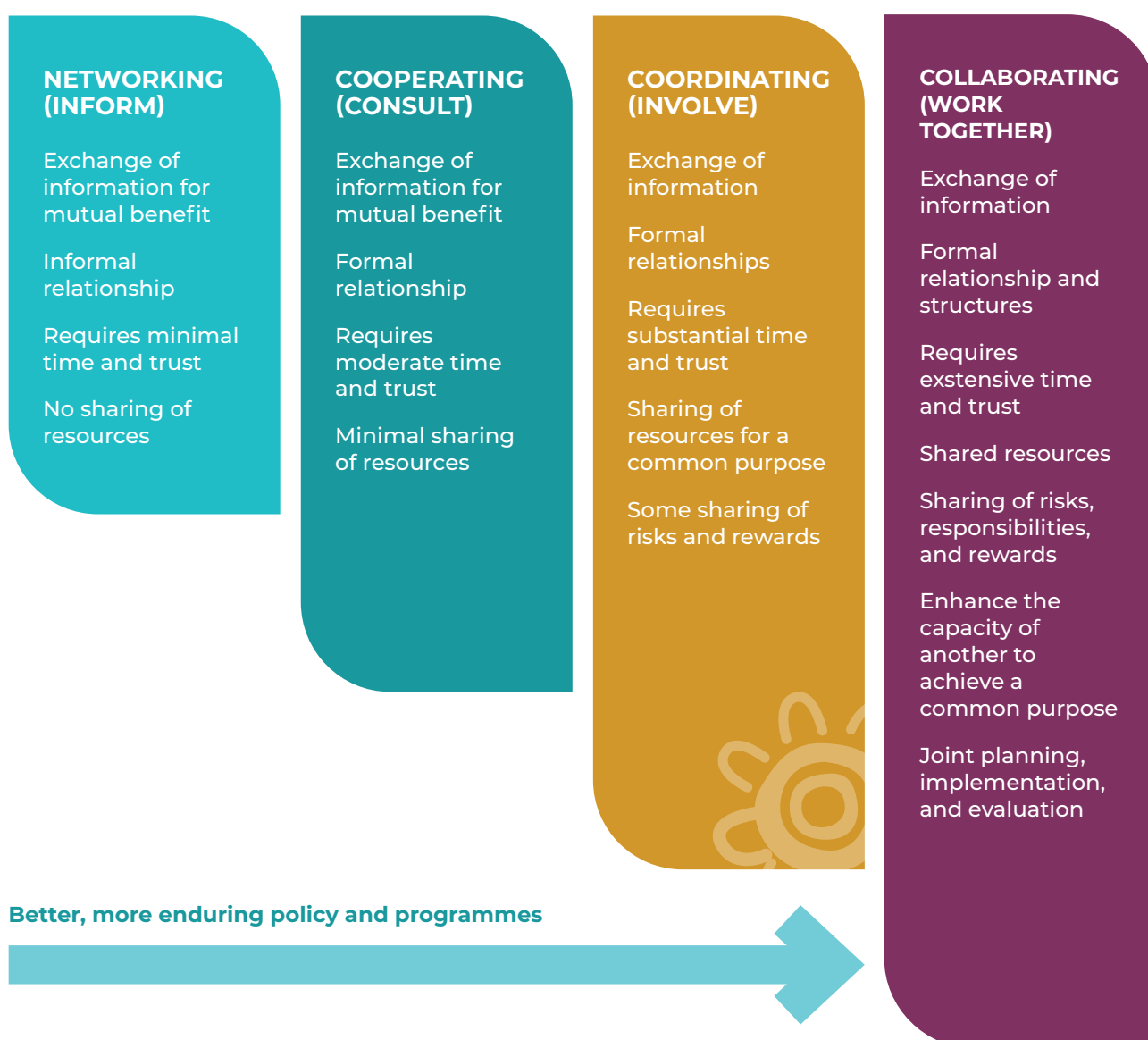
When identifying potential stakeholders for your research, you may come up with a long list of potential contacts, which may exceed the resources you have for engagement activities. Some stakeholders will have greater impact on your project/ research than others. By prioritising stakeholders, you can focus resources on building relationships with those who 'matter most'. This will also help when determining the level/extent to which stakeholders will be involved in the research.

There are two central elements to consider here: efficiency versus legitimacy.

A comprehensive multi-stakeholder process can give a high legitimacy to your research, but it also involves significant time and effort (and costs). The more stakeholders involved, the more difficult and time-consuming it can be to reach common understandings and decisions. Prioritisation of stakeholders can help to balance efficiency and legitimacy.

Refer to the stakeholder identification templates in the workbook for guidance on stakeholder mapping and prioritisation.

FIGURE 2: Stakeholder engagement continuum



(Adapted from *Collaboration: a Tasmanian Government approach*. Hobart: Tasmanian State Government; 2010 (www.dpac.tas.gov.au/divisions/policy/collaboration).

Managing stakeholder relationships

The key to effective stakeholder management is to establish alliances with people who exercise the most influence within their spheres of responsibilities. Depending on the type of stakeholder, and the extent of involvement intended, strategies for mitigating risks to the research may also need to be considered.

While 'soft skills' such as relationship management may be generic to any type of project, there are a few unique features of research-policy/practice engagement that you might want to consider for successful stakeholder management. A rapidly-growing body of research provides guidance on some of the enablers of effective research-policy/ practice engagement (Cairney & Oliver, 2020; Williams et al., 2024) and principles for stakeholder engagement in research (Boaz et al., 2018).

Time is essential to allow mutual trust and understanding to develop. Building mature, reciprocal, and trusting stakeholder relationships takes considerable time, which may be beyond the timeframes of your research/project. This means managing expectations about what can be achieved in the timeframes of your research. As discussed earlier, trust is the key aspect in building relationships and enabling effective knowledge exchange. Trust can be built through clear and consistent communication, reliability, and demonstrating commitment, sincerity and competence, while acting with integrity and working collaboratively towards shared goals and project milestones (Karlsen et al., 2008).

Cvitanovic et al. (2021) identified five strategies to repair trust such as 1) avoid becoming defensive; 2) acknowledge the mistake openly and explain why it happened; 3) put measures in place to prevent it happening again; 4) correct the error by providing updated advice; and 5) allow time to rebuild trust while maintaining ongoing face-to-face engagement.

Managing stakeholder relationships can be challenging. Many of the enablers to stakeholder relationships may be determined by external factors that can be difficult to influence. In recent Australian research, policy actors reported enablers to engagement with academics/ researchers, which included leadership (i.e. their government agency/non-government organisation encourages collaboration with academics/researchers and promotes evidence-informed policy); connections (i.e. knowledge of who to engage within the university/ academic institutes), and common or shared priorities.

Sometimes individuals can influence these factors, but other times it requires bigger shifts in organisational culture. Decision- makers, policy actors, and practitioners might have the ability and authorisation to:

- > Build a government/agency culture that values use of research evidence alongside other sources of information; influence organisational culture through training, capability development, and leadership.
- > Identify strengths, existing processes, and strategic opportunities for research and evaluation such as planning meetings, new projects, evaluation budgets, and links to networks.
- > Identify funds and resources for knowledge translation/research engagement through flexible use of existing budgets. This can enable new knowledge co-creation opportunities between researchers, policy actors, and other stakeholders.
- > Set strategic research priorities that can be used to guide academic research and generate policy-relevant evidence.

As a researcher, you can work through the checklist of suggestions in Box 1 and consider what you can develop over time to support stakeholder relationships. For additional explanations and evidence supporting these suggestions, refer to Design principles and tips for research-stakeholder engagement.

COMMUNICATION AND RELATIONSHIP MANAGEMENT

- Build trust and trusting relationships, and develop credibility and collaborative skills. Establish meaningful connections and collaborations with stakeholders working in your area. Attend meetings or workshops that link with your topic of interest but may not be directly relevant. Engage in both informal and formal discussions and seek opportunities to understand diverse perspectives – this helps to build opportunities to collaborate. Building trust and rapport is key to increase the translation of research considered in policy decisions.
- Improve your communication, interpersonal, and relationship management skills; and communicate frequently and remain an active listener to maintain engagement.
- Establish governance and guidelines/ ground rules for collaboration, which both parties agree to (e.g. shared governance, memoranda of understanding, terms of reference, etc.).
- Be transparent and authentic consider your role as a researcher when engaging with policy and practice, and decide if you are a neutral honest broker or issue advocate.

Developing and maintaining stakeholder relationships
(Boaz et al., 2018; Cairney & Oliver, 2020; Cvitanovic et al., 2021; Haynes et al., 2012)

TABLE 2: Resource for engaging and maintaining stakeholder relationships

Resource	Spreadsheet from the Australian Public Service Commission
What it is	An online spreadsheet that provides guidance on how to identify, initiate, and maintain stakeholder relationships



Strategic Stakeholder Engagement

Develop a stakeholder engagement plan, using appropriate tools and templates (such as in Table 2).

- > Understand the policy process, context, and engage through various channels (e.g. informal catch-ups, formal meetings/ exchanges, sector networks, etc.).
- > Develop and continually refine your 'pitch' to communicate the value that your work will bring to different stakeholders.
- > Build upon prior relationships between organisations; explore opportunities for continued collaborations to enhance potential for cooperative/social learning; sustain stakeholder engagement through research processes.
- > Establish a shared vision for change: identify or establish a shared vision and, where appropriate, guidelines for collaboration which both parties agree to (e.g. shared governance, memoranda of understanding, terms of reference, etc.).
- > Be 'accessible' to policymakers: engage routinely, flexibly, respectfully, and humbly. Where possible, be flexible to be able to respond to and accommodate stakeholder needs and requests. Provide fit-for-purpose research processes, and tailored support and research products (where resources allow), which is important in facilitating 'user-pull'.
- > Sustain engagement through research processes, either individually or as a group, informally or formally, responding to ad-hoc requests where feasible.
- > Be 'entrepreneurial' or find someone (e.g. broker) who can be.

Research Utilisation and Accessibility

- > Make research relevant and accessible - use storytelling techniques.
- > Communicate clearly and concisely: craft your messages and recommendations into clear, concise messages that are accessible to people from diverse backgrounds and disciplines. Use plain language and visuals to convey complex information effectively. Develop tailored research products where resources allow, which is important in facilitating use of research products and tools.
- > Align your research with policy priorities: Focus your research on issues and topics that align with current policy priorities and agendas. Demonstrating relevance to policy increases the likelihood of the research informing policy and practice.
- > Be flexible and offer tailored support (to facilitate use of research products and tools).

- > Plan for strategic dissemination at the outset of new research projects, involving key stakeholders. Produce fit-for-purpose (tailored) research processes, findings, and products.
- > Consider timing: the policy-making process is often time critical; it is essential to have access to relevant, easily digestible research evidence at strategic moments, such as when policy decisions are being discussed or when public attention is high. Timely information can have a more significant impact.
- > Mobilise stakeholder support: Engage with stakeholders, including advocacy groups, affected communities, and other experts. Mobilise their support for action, including research and its potential policy implications. A united front often has more influence.

Continuous Reflection and Adaptation

- > Develop your analytical and problem- solving skills – e.g., to resolve issues or predict engagement challenges.
- > Reflect continuously: should you engage, do you want to? Consider: is your commitment to creating impact greater than adding outputs to your resume?
- > Keep track of when and how you have had impact (is it working?) and revise your practices continuously.

Keeping track of stakeholder relationships

To sustain engagement through research processes and keep track of your interactions and impact, you might want to consider keeping records. This helps to maintain a 'paper trail' for sustaining engagement, in the event of team changes/turnover. It is also very helpful for evaluating your knowledge translation/engagement practice and for reporting research impact.

Technological solutions are available, such as stakeholder engagement management tools and stakeholder/customer relationship management software. However, a simple spreadsheet may be sufficient to record dates of key contacts, details of the stakeholder, the nature of the interaction (e.g. support request, information push, knowledge exchange), and what the outcome was (if any). See Table 2 and Table 8 for further resources.

Element 3: Knowledge translation strategies

Types of knowledge translation strategies

A wide range of knowledge translation strategies is available to researchers/ knowledge producers. These can be grouped into three broad types (Lavis, 2006; Toomey et al., 2022).

Push efforts are typically researcher- driven, and generally focus on dissemination (e.g. 'end-of-grant' or traditional knowledge translation).

Strategies may include, for example, the development and distribution of publications, reports, evidence summaries, or provision of access to materials and resources.

Pull efforts are usually stakeholder-driven. Examples of strategies include capacity- building and training for decision-makers, policy actors, and practitioners to support use of research, employment of knowledge broker roles within decision-making contexts, rapid-response units/consultancies, and development of project templates that instruct teams to provide evidence/rationale for their activities. Pull strategies may involve a number of mechanisms including social influence, facilitation, incentives, and reinforcements.

Exchange strategies are typically mutually driven, and generally focus on improving the interactions between researchers and policy actors/practitioners. This may include the establishment of networks or formal partnerships to support evidence-informed decision making, prioritisation efforts (where policy-actors/ practitioners identify their priorities, turn the questions into researchable questions, and promote research into these questions), deliberative dialogues, or integrated knowledge translation (integration of stakeholders throughout the research process). Exchange strategies can also include the use of knowledge brokers, where their role is to facilitate partnership development or knowledge translation and exchange (rather than to simply assist with making sense of research evidence for decision-making, as identified left).

Examples of knowledge translation strategies are provided in Table 3 along with examples. Outcomes/ effectiveness of knowledge translation strategies are still under study. However, there is some evidence supporting the potential effectiveness of certain strategies (Table 3). Different strategies may be selected for different stakeholder groups, as appropriate to the project and to meet your knowledge translation goals.

PUSH

Efforts by researchers to disseminate messages arising from research

PULL

Efforts by stakeholders/ decision-makers to build capacity for research use: and structures and processes to support the use of research

EXCHANGE

Meaningful, reciprocal partnerships between researchers and stakeholders

TABLE 3: Examples of knowledge translation strategies

Push	Pull	Exchange
Peer reviewed journal articles ○	Knowledge brokers ○ /boundary spanners	Relationships between research producers and stakeholders
Reviews, overviews	Program champions, opinion leaders ○	Community-based participatory research ○
Evidence summaries, policy briefs, toolkits, printed educational materials *	Rapid response units	Communities of Practice
Guidelines	Consultants	Facilitated meetings, deliberative dialogues ○
Conferences ○, webinars	Training/capacity building	Strategic priority setting
Mass media ○	Audit and feedback processes *	Arts-based knowledge translation
Press releases	Electronic reminders (computerised) ○ IT decision-making support ○	Research advisory groups, steering committees
Data visualisation, arts-based dissemination, infographics	Financial incentives (e.g. pay-for-performance schemes to improve practices) ○	Facilitation, knowledge brokering ○
	Academic detailing/ Educational outreach ○	Quality improvement collaboratives ○

○ Mostly effective

* Small effects IF optimally designed and appropriately targeted

○ Promising but mixed or inconclusive effects

(Barwick, 2008; Grimshaw et al., 2012; LaRocca et al., 2012; Wilson & Kislov, 2022; Yamada et al., 2015)

Selecting knowledge translation strategies: where to begin

When selecting knowledge translation strategies, it can be helpful to clarify:

- > the purpose of engagement (revisit your knowledge translation goals);
- > who it is for/with (i.e. your stakeholders); and
- > if it is achievable in complex policy-making systems/ practice/ service environments (Hopkins et al., 2021).

Time and resourcing are often limited in research, so it's important to be pragmatic about what can be achieved within the scope of your project. Knowledge translation strategies do not need to consume much of the project budget, time, or resources, and research evidence suggests that even simple or single knowledge translation strategies may still be as effective as complex strategies, if they include an active component and are targeted appropriately (Grimshaw et al., 2004; LaRocca et al., 2012). An example of this might be an evidence summary or policy brief, facilitated by a knowledge broker.

Importantly, interactive strategies are more effective than passive knowledge translation strategies (such as simple 'push' dissemination of research findings unaccompanied by other activities). The PARIHS (Promoting Action on Research Implementation in Health Services) framework provides a valuable reminder about this when it established that successful knowledge translation depends just as much upon the context where evidence is being introduced, and how it is facilitated, as the quality of evidence itself (Kitson et al., 1998). This framework is also relevant in climate change and environment research communities.

Ultimately, using more interactive and comprehensive knowledge translation strategies can facilitate greater research impact (LaRocca et al., 2012; Thijsen et al., 2024; Wolfenden et al., 2022). To find a balance between all the possible strategies for your stakeholders, a good approach is to mix push, pull, and exchange strategies within your available resources. Employing a knowledge broker, either an individual (e.g. project officer, research associate) or an institution (e.g. CHiAPRT, HEAL Network,) can help foster linkage and exchange with stakeholders, build relationships, and convene deliberative dialogues.

When and how to use knowledge translation strategies?

It's never too late to begin using knowledge translation strategies in your research. It's ideal to commence stakeholder engagement at the beginning of a research project, then development of shared goals may be easier.

The 'usual' research process provides many opportunities and timepoints to engage stakeholders from policy, practice, and community settings. Below we describe four common opportunities where knowledge translation strategies can be used. Some examples of opportunities for knowledge translation/ stakeholder engagement in research are shown in Figure 3.

The Policy Cycle

Policy is a ubiquitous term and often poorly misunderstood. In simple terms it is the course of action undertaken by government, business, or institutions to respond to a problem or realise an opportunity. Public policy relates the decisions of government such as the allocation of budgets, provision of services, and the creation of infrastructure such as schools, roads and hospitals. The policy making process is complex, context specific, and often fraught with tensions between competing interests. This is particularly true for public policy where politics, elections, and changing government priorities can have a significant impact on the final outcome. It is important for researchers, policy actors, and practitioners to be familiar with the policy process and understand how government decision-making operates with their local context to be able to leverage these processes to generate positive community impact.

Beyond project commencement, there are many opportunities in the policy cycle, in service, or program development when research engagement can occur (again: it's never too late!).

FIGURE 3: Stakeholder engagement in the research cycle (adapted from Shantz 2012)

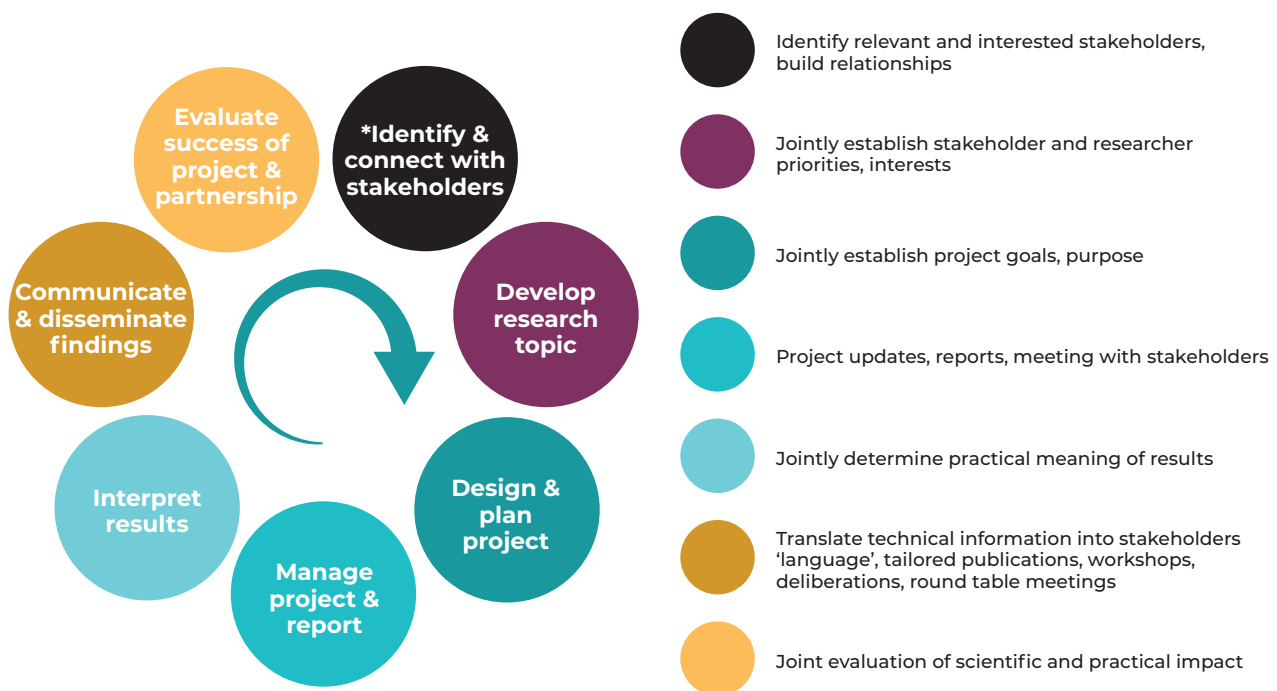


FIGURE 4: The Australian Policy Cycle, Bridgman and Davis (Althaus et al., 2007)



1. During research design

Participatory research and co-design approaches can facilitate collaboration and support knowledge translation. Cooperation between researchers and policymakers at the agenda-setting or design phase supports the development of policy-relevant research questions, identification of potential barriers, suitable data collection and analysis methods, and contextual application of research findings.

Early engagement and planning for research translation supports knowledge exchange over the course of the project; regular review allows strategies to be adapted as needed. Involving knowledge translation expertise at the planning stages can support the integration of knowledge exchange strategies from the outset.

2. Through relationships

Relationships, partnerships, and networks are central to effective knowledge translation. Relationships require communication, commitment, and mutual understanding; being available and approachable supports continued engagement and dialogue. Communication and trust have been identified as critical components of research-policy relationships (Cvitanovic et al., 2021).

3. In dedicated roles

Advisory groups and steering committees can be a useful mechanism for establishing partnerships between researchers and policy actors and for maintaining communication pathways. Some recommendations when establishing advisory groups (Williams et al., 2024) include:

- > Ensure that organisations are represented appropriately, e.g. by individuals with interest in, and capacity to contribute to, the research translation process (refer back to your stakeholder engagement plan).
- > Have a dedicated coordinator or project manager.
- > Ensure that terms of reference and objectives of the group are understood by all members.
- > Ensure that meetings have a clear purpose, agenda, and timeline.
- > Meet face to face, if possible, to encourage participation and/or use videoconferencing technology, particularly when members are from diverse geographical areas.
- > Ensure that potential conflicts are disclosed and discussed, if appropriate.

Knowledge brokers are an example of a dedicated role that can be used to facilitate connections between researchers and policymakers or other stakeholders (Bornbaum et al., 2015). They may play a range of important roles, such as:

- > Identifying, engaging, and connecting with stakeholders.
- > Helping stakeholders understand each other.
- > Identifying common goals and mutually beneficial opportunities.
- > Establishing and maintaining communication channels.
- > Facilitating collaboration (e.g. workshops, advisory committees, online forums).
- > Facilitating capacity building (e.g. educational activities for stakeholders).
- > Project coordination (e.g. grant applications, stakeholder engagement).
- > Supporting evaluation and feedback channels.
- > Developing and sharing knowledge products, such as evidence syntheses and policy briefs.

4. Capacity development

Individuals and organisations can increase their skills, resources, and culture for integrating evidence into policy and decision-making, and vice-versa. Knowledge translation strategies to develop capacity may include:

- > Research translation skills training for researchers and policymakers.
- > Training and tools for evidence use – finding, appraising, and applying to practice.
- > Access to tailored resources, such as evidence syntheses and policy briefs.
- > Access to funding, training, and technology to support ongoing skills development.

Element 4: Develop a communication plan

Strategic communication in research

Communication is a critical part of successful research and knowledge translation. Research communication can take many forms, from involving stakeholders and participants in research processes and exchanging outputs and preliminary findings with partners, to sharing research outcomes to different audiences and influencing decision-makers, policy actors, and practitioners.

Most research is communicated in 'traditional' formats such as peer-reviewed journal articles and conferences. While these are important for research performance metrics, these communication methods have limited effect on influencing policy and practice.

A strategic approach to communication is more likely to support translation of your work and create research impact. This section gives an overview of how to develop an effective communication plan. A template is included in the Knowledge Translation Plan Workbook which can be completed to suit your project. Communications planning should be done at the commencement of your project.

An important first step is to establish your purpose (or key messages) for communication. Revisit your knowledge translation goals and consider what types of communication you might need for different stakeholder groups and audiences at different times throughout your project. There might be multiple purposes for communication – such as sharing knowledge, informing practice, and influencing policy.

Then, you can consider the most appropriate communication methods for each communication product/process. It might be written, graphical, verbal/ discussion, or in another format. Find out what 'products' are most relevant and useful to your stakeholders. For example, in government, policy actors are often required to provide briefings to executive directors or a minute to their portfolio's minister. Consider also what channels are available and most appropriate – this might include in-person, on-paper/ print, or on-screen/digital channels. Some examples of common research communications are provided on the next page.

ON PAPER

- Infographic
- Policy brief
- Poster report
- Letter, submission briefing/minute (e.g. to a Minister)
- Journal article
- Book chapter
- Flyer magazine

ON SCREEN

- Blog post
- Email
- Image
- Website
- Webinar
- Video
- Infographic
- Social media post
- Podcast
- Text message
- App

IN PERSON

- Partner meeting
- Network event
- Seminar
- Conference
- Public hearing
- Parliamentary hearing
- Keynote address
- Elevator/corridor chat
- Public event
- 'Lunch and learn'
- Trade show

Communications Planning

A communication plan is an essential part of your research engagement/knowledge translation efforts. Your objectives for communication are going to be more nuanced and distinct from your broader knowledge translation/impact goal. You may also have limited time and resources for communications beyond 'traditional' journal publications, but 'non-traditional' communications outputs can greatly assist in achieving impact (and your knowledge translation goals). Developing a communication plan can help you prioritise what communication products you will develop, for what stakeholders, and what formats.

A communication plan should include at the minimum the potential products, stakeholder groups/individual stakeholders and audiences, objective/purpose, and method/channels. We also recommend including key messages. A brief worked example is provided below in Table 4, and the blank template is provided in the Knowledge Translation Plan Workbook.

Communicating effectively with different stakeholders (Brul, 2014)

When preparing any communication material, either written or spoken, it helps to consider your objective/purpose for communicating (as noted in the communication plan template above). Think ahead to after you have communicated;

- What do you want your audience to think/believe/know?
- What do you want your audience to feel?
- What do you want your audience to do?

Communicating effectively with your stakeholders and audiences requires you to

- Connect with your audience.
- Stimulate your audience.
- Be understood by your audience.

The six principles of 'sticky' ideas is a useful guide to consider how to connect with and stimulate your audience. You can also explore creative and engaging ways to communicate in written/imagery and spoken forms.

You can use the seven Cs of communication as a checklist, to help you to communicate more effectively, and ensure that you will be understood. Note: there is some crossover with the concepts here, and the principles of 'sticky' ideas – particularly with concise, clear, and concrete.

FIG 5: Six Principles of Sticky Ideas (Heath & Heath, 2007)

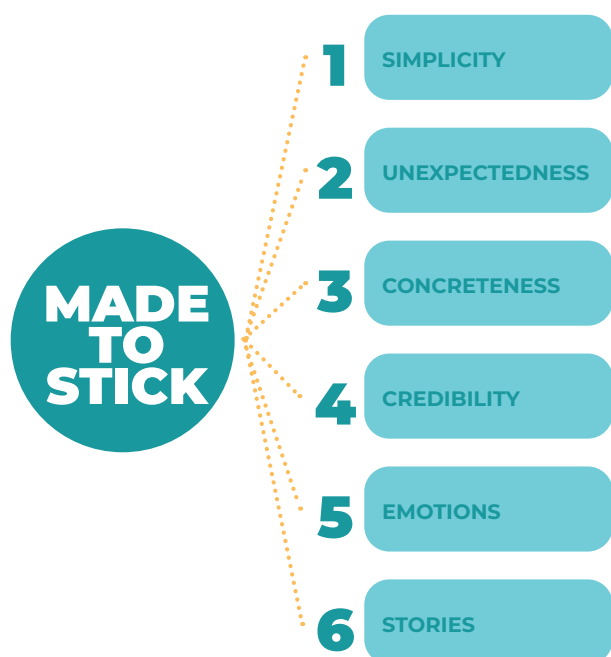


FIG 6: The 7 Cs of Communication (Broom & Sha, 2013)

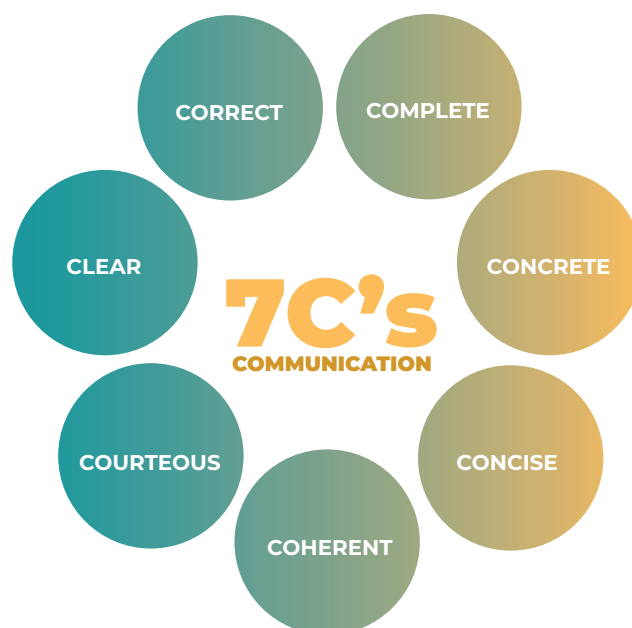


TABLE 4: Communication plan worked example (adapted from Jones et al and HEAL website)

Product	Objective/ Purpose	Stakeholders, Audiences	Methods/ Channels	Key message (summary)	Timing/ Frequency
Type e.g. papers, reports; infographics, policy briefs etc.	Communication objective for each product who acts on the findings/has influence	Organisations and people that the info is relevant to, who acts on the findings/ has influence	Where/how information is to be disseminated	Why the information is useful, relevant, or important; how stakeholders should feel or act	
Journal paper: Health impact assessment of wood heater smoke and mortality (Vardoulakis et al., 2024)	Inform future research and provide policy recommendations	> Researchers > Policy actors > Practitioners	> Peer-reviewed journal (The Medical Journal of Australia) > HEAL website (publicly available)	1. Woodheater smoke exposure is harmful to human health 2. More air quality monitoring and modelling is needed 3. Actions to ban new wood heaters, phase out existing ones, and adopt a clean domestic energy transition are beneficial	Published November 2023
Online Toolkit (Green et al., 2022)	Provide evidence-based guide for clinicians to be a green prescriber for inhalers	Practitioners (clinicians)	> Website (Irish Doctors for Environment – publicly available) > Poster presentations at Irish Thoracic Society 2021 and 2022	Evidence-based pocket guide to clinicians to reduce carbon footprints of inhalers while improving patient care.	Published 2022
Submission to government consultations through the Quality Urban Green Spaces workshop series (HEAL South Australia Regional Hub, 2024)	> Provide feedback and recommendations to influence decision-making > Bring stakeholders together to collectively develop recommended actions for decision-making	Policy actors (Green Adelaide)	> Submission to Green Adelaide in response to their draft 'Urban Greening Strategy for Metro Adelaide' in June 2024. > HEAL website (publicly available)	1. Report the stakeholder workshop findings 2. Collaboration across multiple portfolios and jurisdictions is crucial 3. Strong government leadership and robust regulator frameworks are central to improved outcomes.	Submit in time to tie in with government strategy consultation
Factsheets: "Know your health risk and make a plan" in both English and Arabic (Healthy-Air Project, 2026)	Provide bushfire smoke related health protection advice for both people with asthma and health professionals, including people from Aboriginal and culturally diverse communities	> People with asthma, including people from Aboriginal and culturally and linguistically diverse communities > Health professionals	> Healthy-Air project website (publicly available) > HEAL website (publicly available)	1. Inform the audience about the health risk of bushfire smoke and the vulnerable populations 2. Provide evidence-based advice to people with asthma and health professionals about the best ways to avoid smoke and protect health	Published in time before the end of the project

Element 5: Evaluate your engagement and impact

As research infrastructure and academic environments around Australia continue to change, academic researchers are increasingly expected to demonstrate their ability to not only deliver new knowledge but ensure that knowledge is used to benefit society.

Types of research impact

Achieving demonstrable research impact 'beyond the academy' is more likely where there is knowledge translation and engagement with collaborators, stakeholders, and groups or individuals who may be affected by the research or research outcomes. Research impact is defined in different ways, however, is generally understood as: the contribution that research makes to the economy, society, environment or culture, beyond the contribution to academic research (ARC).

Scope of the impact can be local, regional, national, or international, as well as at the level of individuals, groups, communities, organisations, or agencies, sectors, or industries.

More specifically, impact may occur in five broad areas (Banzi et al., 2011; Canadian Academy of Health Sciences, 2009; Greenhalgh et al., 2016; Kuruvilla et al., 2006):

- > Advancing knowledge/research-related impacts.
- > Capacity building (developing researchers, skills, and research infrastructure to create impact).
- > Informing decision-making and policy (changes in practice, improved public understanding, research-informed policy, at any level by the public).
- > Service and system impacts (wide change or transformation, improved service delivery, cost savings, return on investment).
- > Economic and societal impacts (commercialisation, collective or individual economic engagement including employment, improvements in health and living conditions, equity, social justice, and cultural outcomes).

Within each of these types of research impact, there may be varying types of research use (Kuruvilla et al., 2006; Weiss, 1979) or change (Edwards & Meagher, 2020). These could include:

- > Instrumental research use - research findings directly drive or define plans, decisions, actions, practices, or policy.
- > Mobilisation of support - research provides persuasive evidence to support activities or policy proposals or raise awareness for new policies or actions.
- > Conceptual research use - research leads to changes in knowledge, awareness, attitudes, and emotions, or research influences the ideas, concepts, and language of policy deliberations.
- > Redefining/wider influence - where research leads to rethinking and changing established practices and beliefs.
- > Enduring connectivity - changes to the number and quality of relationships and trust.

Evaluation indicators and building impact narratives

Planning, activity, outputs, outcomes and impact may be reported and assessed over time. Although research activity may be completed within one, two, or three years, it may be five or more years before impact can be assessed or 'measured'.

Research impact assessment is a growing field, and many different approaches are available. Some of the commonly used methods include:

- > The 'payback' model, including the activities that are perceived to have contributed to the impact.
- > The 'mapping' model - describes and maps networks and flows of knowledge and the effects of any interactions from research.
- > Impact narrative/case study - reports or tells a compelling story about the value of research outcomes and impacts descriptively, including the activities that are perceived to have contributed to the impact.

TABLE 5: Types of research impact and potential indicators

Impact type	Potential indicators
Advancing knowledge Scientific advances, understanding, method, theory e.g. journal articles, reports, guidelines	> Citations, views, conference acceptances, media; field-weighted citation impact, impact factors
Public opinion and engagement, understanding e.g. public awareness, debate	> Invitations to present, media; public and online forums, social media engagement, altimetric attention scores (measure of public/ media interest in academic publications) > Research collaborations and networks
Informing decision-making and policy/ program change or development, implementation, informing practice	> Diversity of policy actors involved (levels of government, portfolios, agencies) from the project outset > Project governance composition > Trust indicators (e.g. repeat engagement, informal communication frequency) > Evidence of co-authorship with policy actors, practitioners, community members > Number of engagement activities (meetings, workshops, briefings) > Cross-sector engagement (e.g. transport, housing, planning, not just health) > Citation in policy, programs, guidelines; implementation outcomes (adoption, reach etc.), participation in advisory committees or expert panels (i.e. climate change reports panels), Resourcing signals
Environmental impacts Protection and improvement of environmental quality and sustainability (e.g. water quality, biodiversity, pollution reduction, climate resilience)	> Protection and improvement of environmental quality and sustainability (e.g. water quality, biodiversity, pollution reduction, climate resilience), improved environmental monitoring and risk management, climate adaptation and resilience outcomes
Health impacts Improvements in human health, wellbeing or disease prevention	> Reduced disease incidence or exposure risk, improved surveillance and early detection systems, improved public health preparedness and response, improved health behaviours and awareness, reduced healthcare costs or burden of disease
Social and economic impacts (Contribution to society and the economy, of benefit to individuals, organisations and nations) e.g. health, education, employment	> Improved health, education, employment outcomes

(Banzi et al 2011; Canadian Academy of Health Sciences 2009, Greenhalgh et al 2016, Kurivilla et al 2006, Cvitanovic et al 2016)

Evaluating your knowledge translation goals is your first step in assessing research impact. Assign indicators as appropriate to your goal and consider what you can collect data for over time within your available resources. This may include indicators of reach, usefulness, use, collaboration, program or service effectiveness, policy change, knowledge and attitude change, and/ or behaviour or systems change.

Example:

If your project's main knowledge translation goal was to share knowledge, you might track paper citations, blog views, social media mentions, conference acceptances, invitations to present, or impact factors. In contrast, if your project's knowledge translation goal was to inform practice through co-produced tools and resources you might count and describe the number and type of interactions with practitioners, including requests for support or advice; describe involvement of practitioners and other stakeholders in co-production of tools and resources, interview them to ask about their awareness and use of tools and resources produced, and of their intentions to change practice. Some examples of indicators are provided in Table 5. Importantly, consider how to include the voice of your stakeholders in assessing your research impact.

Importantly, consider how to include the voice of your stakeholders in assessing your research impact.

“Researchers don’t make products – industry does; they don’t develop policy - government does; they don’t deliver social services – community does. So we need to demonstrate impact through the voices of those who are using the evidence.”

David Phipps, Assistant Vice-President, Research Strategy & Impact at York University

Some examples of impact narratives and case studies can be explored in research centres and institutes' impact reports, and in national impact assessment exercises, such as ones that Australia and the United Kingdom have developed. Links to these, including a selection of impact narrative examples and case studies, are provided in the section on knowledge translation case studies. A historical example of a short impact narrative from the 2018 Engagement and Impact Assessment in Australia can be found next..

Impact narrative example:

Social determinants of health and wellbeing

We now have evidence that social injustice is causing death and illness on a grand scale, which is both unfair and preventable. In Australia, the stark reality is that low-income individuals live six years less than their wealthier counterparts, while Indigenous Australians face an even graver disparity, with life expectancies 11 years shorter than the national average.

The Engagement and Impact narrative research (2018) that investigated the social and economic determinants of health and wellbeing by Baum, Freeman, Fisher, and colleagues has been critical in shaping policy, practice, and societal changes. In public health, where the effects of policy and practice changes on population outcomes often take years to materialise, research impact is best measured through proxies such as contributions to policy decisions and shifts in knowledge and attitudes. While immediate impacts are rare in this field, between 2011-2016, this work:

1. Provided the critical evidence base for South Australia's "Health in All Policies" initiative, a cross- government effort aimed at achieving greater health equity;
2. Catalysed global awareness and reshaped discourse on the social determinants of health through thought-leading research and advocacy;
3. Enabled organisational and practice changes within the Central Australian Aboriginal Congress, a community-controlled Aboriginal health service, improving the quality of care delivered.

Without this rigorous research and thought leadership, these impacts would have been severely undermined.

Researchers achieved this impact through a deliberate knowledge translation and engagement approach, including decades-long relationships with public and community sector stakeholders, research partnerships, policy dialogues, consultancy, evaluation, and training.

(Adapted from: Baum F, et al. for the Flinders University Southgate Institute for Health, Society and Equity. (2018) Engagement and Impact narrative submitted to the Australian Research Council 2018 Engagement and Impact Assessment - 11 Public and Allied Health Sciences. (unpublished)).

TABLE 6: Some resources for planning, evaluating and describing research impact

Impact type	Potential indicators	
Altmetric www.altmetric.com	An online site to view your research publications' mentions in social media and news	
Sage Policy Profiles policyprofiles.sagepub.com	A searchable site that identifies any policy documents citing any of your research publications	
London School of Economics and Political Science Resaerch Impact Module	A document of guidance on constructing an impact narrative/story	
University of Western Australia Research Impact Toolkit www.rdi.uwa.edu.au/research-impact-toolkit#evaluate	A self-guided online resource covering multiple aspects of impact planning and evaluation. Some features are only available to UWA staff.	
Cochrane Training Evaluating knowledge translation videos training.cochrane.org/resource/evaluating-knowledge-translation-part-1	A three-part self-guided collection of videos, tools and articles (Part 1: What is evaluation and why is it important; Part 2: How do we know we are making a difference; Part 3: How to use social media analytics to evaluate)	
Emerald Impact Services www.emeraldgrouppublishing.com/impact-services	A paid, self-paced online service to support researchers in planning and documenting impact	
CSIRO Impact Evaluation Guide	This Impact Evaluation Guide articulates such a common framework, and its consistent and rigorous use across our organisation ensures that outcomes from each evaluation are comparable – across Research Units and across time.	
UKRI Environmental Sustainability Strategy 2025 to 2030	This strategy outlines ambitions and tactics over a five-year period. It includes a detailed action plan to support the implementation of the strategy, and works to balance the realities of research with a sustainable and environment-focussed approach.	



Knowledge translation and impact case studies

Best practice case study

The following study is included as a best-practice case study, demonstrating a comprehensive approach to knowledge translation across the lifespan of a research project. Additional case studies, particularly from the HEAL Network, are provided in the Appendix. While these HEAL Innovation Fund projects are at early stages of implementation, and therefore not yet expected to demonstrate policy or practice impact, they are presented as strong examples of effective knowledge translation planning.

Knowledge translation approach used in ARC-Linkage project: “Towards zero hunger: Improving food relief services in Australia” (2021-2024 (Bogomolova S, Goodwin-Smith I, Coveney J, Buckley J, Pettman T). Partners: Centre for Social Impact, Flinders University; College of Nursing and Health Sciences Flinders University; UniSA Allied Health and Human Performance; Centre for Health in All Policies Research Translation; Department of Human Services SA; Preventive Health SA, AnglicareSA, Foodbank SA&NT, The Food Centre Inc.

Element	What happened, what worked/didn't work, what was learned
Knowledge translation goals/ Impact goals	> Building on existing relationships, a trans-disciplinary team of researchers initiated a new partnership project with two government agencies and three community food relief sector organisations. The researchers hosted a stakeholder meeting to align interests, which informed a grant application (national research funding agency). After two grant attempts, the project was funded. > A kick-off meeting identified shared goals, documented as 'propositions' for partner feedback during subsequent interviews. These propositions were revisited at each partner meeting. > Defining project goals was challenging, especially when co-benefits were unclear, and required ongoing revision. > Researchers defined the knowledge translation goal as: “Advance knowledge co-production and evidence-informed practice and policy in household food insecurity responses in South Australia”. > Individual knowledge translation objectives related to informing practice, policy, and fostering system change. Partners prioritised awareness-raising before practice change.
Stakeholder engagement	> To identify relevant stakeholders, the team used a stakeholder identification template and mapping matrix during a team meeting, which revealed more potential stakeholders than could be engaged. Researchers prioritised the two government and three community sector stakeholders that had partnered on the Linkage Project, and selected additional stakeholders in the community sector and local government as 'critical friends'. The team also regularly engaged with the South Australia-wide food relief community of practice, and selected Non-Government Organisations and local governments that were actively pursuing food security strategy or evolving their service models. > Over time, key contacts were revised as stakeholders frequently changed roles. Maintaining multiple contacts within an agency was important to mitigate key person risk, typically involving a manager and a subject matter expert. > Interactions with each stakeholder group/individual were tracked in a simple spreadsheet, recording the type of interaction any outcomes (or demonstrable impacts).

Element	What happened, what worked/didn't work, what was learned
Knowledge translation/engagement strategies	> Staffing budget was used flexibly to hire a researcher with knowledge brokering and policy experience as the primary knowledge translation strategy. This enabled greater relationship building, co-production opportunities, consultancy responses, co-authoring, evidence searching, and strategic communication. > On reflection, a mix of knowledge translation strategies could have been more effective. More resources could have been allocated to team co-location, improved design, more frequent group partner meetings, and possibly a broader steering committee for governance and buy-in at other levels of the 'system'.
Communications planning	> At the start, the knowledge broker drafted a strategic communication plan, inviting input from Chief Investigators and PhD students. External partners were invited to provide feedback, aiding publication permissions. Partners were invited to co-author selected communications, supported by a workflow and authorship agreement document. > Despite strategic efforts, unexpected communication opportunities arose, especially from grey literature reports, which led to presentations and briefings, and public engagement with a peer-reviewed paper, leading to national TV and radio appearances. > Tailored, short reports were the main method of progress reporting. However, progress reports failed to engage; direct conversations proved far more effective than a simple 'push' of information. > For commissioned projects occurring concurrent to the Linkage project, 1:3:25 reports were well-received by decision-makers.
Evaluation of impact	> The team has produced an engagement and impact narrative to demonstrate progress on knowledge translation goals. > Prospective impact evaluation may be possible in future to better understand demonstrable impacts. Impact evaluation metrics include: • Number and type of contact/stakeholder interactions over three years • Attendance and representation at key meetings/workshops, sustainment of agency representation • Co-authorship and joint presentations • Meeting requests and invitations to present • Invitations to partner on new projects • Inclusion of research to policy/in service delivery/organisational processes • Downloads of grey literature reports; and downloads and altmetric attention to peer-reviewed publications • Policy tracing
Demonstrable impacts	> To date, the project has led to: • Policy improvements, via commissioned redesign of a state government financial wellbeing program • Enhanced service delivery, via improved client referral processes and plans for an evolved community food/social access model in Foodbank SA&NT, and a new collaborative research grant to transform harvest surplus into nutritious foods through social enterprise • Adoption of an innovative service model, the 'social supermarket', via influencing service design in local governments and community sector organisations.

TABLE 7: Online sources with examples/case studies of research impact

Source	What it provides
Australian Research Council 2018 Impact studies (narratives) https://dataportal.arc.gov.au/EI/Web/impact/ImpactStudies	This repository includes summaries of narratives that were scored 'high impact' in the inaugural Australian research impact assessment. For example: 'Safeguarding the elderly from abuse and neglect'
National Health and Medical Research Council impact case studies https://www.nhmrc.gov.au/about-us/resources/impact-case-studies	This webpage includes impact case studies from NHMRC-funded research, described narratively and in poster/infographic format. For example 'Health and the built environment'
UK Research Excellence Framework 2021 impact case studies https://results2021.ref.ac.uk/impact	This repository includes examples of research impact narratives, such as 'Addressing driver behaviour'
Research impact reports, booklets and stories from Australian research institutes and centres	https://www.unsw.edu.au/arts-design-architecture/engage-with-us/our-impact www.unisa.edu.au/research/rbrc/research-impact/#impact https://www.thekids.org.au/about-us/publications/impact-report-2023/ baker.edu.au/impact/impact-report



Stakeholder engagement: principles, tips and checklists

Design principles and tips for research-stakeholder engagement

These guiding principles and tips build on the checklist provided earlier in Box 1, and focus on researcher engagement with policy, practice, and service settings.

Note: community/citizen engagement is equally important and follows similar principles – but if community members are your key stakeholders, be sure to follow relevant guidance and principles for community participation and co-production in research.

Design principles: Boaz et al (2018) recommend engagement in research, based on a combination of existing literature and new empirical insights from a longitudinal study of stakeholder engagement (Boaz et al., 2018).

Tips: Cairney and Oliver (2020) recommend the following individual actions by researchers engaging with policy, practice and service settings, based on a synthesis of 86 publications (Cairney & Oliver, 2020).

Design principles for stakeholder engagement

Organisational

1. Clarify the objectives of stakeholder engagement

The objectives might be one or more of accessing knowledge and skills; supporting interpretation of the results and drafting recommendations; supporting future influence and impact on policy and practice; increasing recruitment/enabling research; supporting transferability. The objectives then need to be shared among all parties.

2. Embed stakeholder engagement in a framework or model of research use

There are a number of models and frameworks designed to show how stakeholders might be engaged in a way that helps increase the chances of research being used in policy and practice, for example, the linkage and exchange model (Boaz et al., 2016).

3. Identify the necessary resources for stakeholder engagement

Resources to consider are budget, time, skills, and competences to manage engagement.

4. Put in place plans for organisational learning and rewarding of effective stakeholder engagement

For example, through appropriate evaluation of stakeholder engagement.

5. Recognise that some stakeholders have the potential to play a key role

Identify those stakeholders who are particularly interested in being engaged and those who are likely to be influential.

Depending on the objective of stakeholder engagement, they may provide the most useful input, and are most likely to play a key role in using the results; their engagement should be especially encouraged.

Values

6. Foster shared commitment to the values and objectives of stakeholder engagement in the project team

Ideally, ensure the commitment is there from the outset (Deverka et al., 2012).

7. Share understanding that stakeholder engagement is often about more than individuals

Consideration needs to be given to stakeholders' roles where they act as representatives – their power and influence within organisations and networks they represent and how these change over time.

8. Encourage individual stakeholders and their organisations to value engagement

Support and build capacity for stakeholders and their organisations to engage.

9. Recognise potential tension between productivity and inclusion

Engagement may lead to greater relevance and impact, but may have implications for productivity in meeting project objectives (for example, in a timely fashion). Engaging stakeholders, taking into account their needs and inputs and adjusting elements of the research project based on their feedback takes time and can slow down the research process.

10. Generate a shared commitment to sustained and continuous stakeholder engagement

Project teams and stakeholders see the value of links between research producers and research users to build ongoing collaborations in order to meet the objectives.

Practices

11. Plan stakeholder engagement activity as part of the research programme of work

This should be built into the project protocol or plan (Pokhrel et al., 2014).

12. Build flexibility within the research process to accommodate engagement and the outcomes of engagement

It will also be important to build in mechanisms to allow researchers to have the independence to articulate what is out of scope.

13. Consider how input from stakeholders can be gathered systematically to meet objectives

The importance of some face-to-face contact and interactions should be considered.

14. Consider how input from stakeholders can be collated, analysed, and used

This important aspect of stakeholder engagement needs to be considered earlier than often happens.

15. Recognising identification and involvement of stakeholders is an iterative and ongoing process

Ongoing interaction will be fostered by taking the time and creating the structures to build trustful relationships.

Tips for research-policy engagement

(Cairney & Oliver, 2020)

1. Do high-quality research.
 - Use specific well-established research designs, methods, or metrics
2. Make your research relevant and readable.
 - Provide and disseminate easily understandable, clear, relevant, and high- quality research
 - Aim for the general but 'not ignorant' reader
 - Use storytelling. Produce good stories based, for example, on emotional appeals or humour to expand your audience
3. Understand the policy process, policymaking context, and key actors.
 - Understand the policy process in which you engage - policy change often happens incrementally, and researchers can help catalyse changes – especially when, on occasion, a 'policy window' opens (where factors align with evidence, and researchers can support a policy advancement)
 - Note the busy and constrained lives of policy actors
 - Maximise your use of established ways to engage, such as in advisory committees
 - Be pragmatic about what 'success' looks like, accepting that research rarely translates into policy options directly
4. Be 'accessible' to policymakers: engage routinely, flexibly, and humbly
 - As publicly funded professionals, it is the job of academics to engage with policy and the public
 - Discuss topics beyond your narrow expertise, as a representative of your discipline or the science profession
 - Be humble, courteous, professional, and recognise the limits to your skills when giving policy advice
 - Respect policymakers' time and expertise
5. Decide if you want to be an 'issue advocate' or 'honest broker'
 - There is a commonly cited ethical dilemma about whether to go beyond providing evidence to recommend specific policy options or remain an 'honest broker' explaining the options
 - If making recommendations, use storytelling to persuade policymakers of a course of action
- However, note the consequences of becoming a political actor. David Nutt famously lost his advisory role after publicly criticising a government drugs policy, some describe the loss of one's safety if adopting an activist mind-set, and anecdotal conversations describe the risk of losing credibility in government if seen as too evangelical while giving policy advice. However, more common consequences include criticism within one's peer-group, being seen as an academic 'lightweight', being used to add legitimacy to a policy position, and the risk of burnout
6. Build relationships (and ground rules) with policymakers.
 - Relationship-building activities require investment and a particular skillset, but working collaboratively is necessary to have evidence influence policy
 - Academics could identify and connect with policy actors to provide better insight into policy problems. These people can act as champions for your research, and help to identify who else are the most helpful policy actors, or may have connections to Ministerial advisors
 - However, collaboration can also lead to tensions and reputational risk. Therefore, when possible, produce ground rules that are acceptable to academics and policymakers/practitioners. Successful engagement may require all parties to reach consensus about processes and outputs
7. Be 'entrepreneurial' or find someone who is.
 - Consider your role as a researcher – and whether you can be a daring, persuasive scientist, comfortable in policy environments, and always available when needed.
 - Develop 'media-savvy' skills to 'sell the sizzle'
 - Become able to convince people who think differently that shared action is possible, and that real, tangible impacts are deliverable
 - If not able to act in this way, hire brokers to act on your behalf
8. Reflect continuously: should you engage, and is it working?
 - Academics may be a good fit in the policy arena if they 'want to be in real world', 'enjoy finding solutions to complex problems' or are driven 'by a passion greater than simply adding another item to your resume'
 - Keep track of when and how you have had impact, and revise your practices continuously

TABLE 8: Some resources and tools for stakeholder engagement

Resource	What it is	
Australian Public Service Commission	An online spreadsheet that provides guidance on how to identify, initiate, and maintain stakeholder relationships	
Taskforce Toolkit Stakeholder Mapping Template	Online PowerPoint template for mapping stakeholders based on their influence and interest	
Taskforce Toolkit Stakeholder Feedback Tracker Template	Online Excel template that provides a way to record and track stakeholder feedback	
Taskforce Toolkit Stakeholder Engagement Plan Template	Online Excel template used to plan out and maintain stakeholder engagement	

CHECKLIST: avoiding failure of collaborations with industry or policy actors

Environmental Context:

- Assess market conditions and competition
- Evaluate potential for developed 'outputs'
- Obtain governmental support
- Review relevant legal restrictions and regulations

Collaboration Context:

- Consider previous experience with similar partners
- Generate shared understanding of the type of activities from past collaborations
- Assess capacity to integrate acquired knowledge (absorptive capacity)

Interorganisational Processes:

- Align and clarify strategies, visions, goals, and expected outcomes of collaboration
- Establish and manage governance tools (intellectual property rights, contracts, roles, responsibilities)
- Address geographical distance and lack of face-to-face interaction

Management and Relationship Factors:

- Build trust to enhance information flow
- Foster a culture of mutual understanding
- Ensure regular communication and continuous feedback
- Develop a common 'language' suitable for both/all partners
- Confirm commitment and willingness to invest effort
- Address power imbalances between partners

Actors' Characteristics:

- Acknowledge different missions and objectives (e.g. research vs. profit vs. policy goals)
- Manage conflicting management styles and decision-making processes
- Acknowledge organisational bureaucracy and flexibility issues
- Share information about reputations and credentials of partners



From Research to Impact: Delivering practical outcomes through research engagement

Knowledge Translation Plan Workbook

What are your knowledge translation goals?

(Long-term aim, distinct from project goals)

What are your knowledge translation objectives?

(Short-term aim that contributes to achievement of goals)

Who do you need to engage?

Groupings/categories	Organisaitons	Individuals

Who should you prioritise?



'Key player'		
Influential, not interested (meet their needs)		
Interested, not so influential (show consideration)		
Low influence and interest (minimum effort)		

What strategies will you use throughout?

(Aim for integrated, relational approaches throughout. Revisit your knowledge translation goals to assist in choosing knowledge translation strategies. Target strategies to your stakeholder groups. Mix push, pull/facilitating user pull, exchange where resources allow)

How will you communicate with stakeholders and other audiences throughout?

Inform This Stakeholder Group contains individuals who require a broad level of awareness of the project. These stakeholders may also be influential/important conduits of information to other stakeholders.	Consult This Stakeholder Group contains individuals who have a requirement to possess a good understanding of the project and will be invited to provide input at critical points.	Involve This Stakeholder Group contains individuals who have a high-level of engagement with the project and are involved in the decision-making process.	Collaboration This Stakeholder Group contains individual stakeholders who are responsible for driving the project.
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Stakeholder Group	Engagement Type Inform - Consult Involve - Collaborate	Communication Objective (purpose or key message)	Method of Communication	Frequency

How will you measure impact of your knowledge translation efforts? (research impact)

(Consider types of impact according to your knowledge translation goals e.g. Academic and research capacity building; public engagement; policy, program and practice impacts; systems and service-wide impacts; social/economic/health impacts)

Further reading

Canadian Institutes of Health Research. (2012). **Guide to Knowledge Translation Planning at CIHR: Integrated and End-of-Grant Approaches**. Government of Canada.

https://cihr-irsc.gc.ca/e/documents/kt_lm_ktplan-en.pdf

Healthway. (2023). **Healthway Knowledge Translation Guide**. Government of Western Australia.

<https://www.healthway.wa.gov.au/our-funding/healthy-research-program/knowledge-translation-tool-kit/>

The Lowitja Research for Impact tool

<https://doi.org/10.3389/fpubh.2016.00160>

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Appendices

Appendix A: Glossary of terminology

Evidence-informed decision-making (EIDM):

'the process of distilling and disseminating the best available evidence from research, practice, and experience and using that evidence to inform and improve public health policy and practice'. Put simply, it means finding, using, and sharing what works in public health (Leite, 2011).

Knowledge translation: "The synthesis, exchange, and application of knowledge by relevant stakeholders to accelerate the benefits of global and local innovation in strengthening health systems and improving people's health." (Sudsawad, 2007).

Knowledge exchange: The interaction between the knowledge user and the researcher, resulting in mutual learning (CIHR, 2012). Effective knowledge exchange involves interaction between decision-makers and researchers and results in mutual learning through the process of planning, producing, disseminating, and applying existing or new research in decision-making, as cited by Armstrong, et al (2011)..

Research-policy translation: Policy translation is a framework, which helps researchers understand the process of travel of (policy) innovations across countries better, and as a result, manage these in a better way (Mukhtarov, 2021).

Research translation: Research translation is the process of moving research ideas from labs to clinics. It ensures that new medical discoveries become part of the clinical practice of GPs, other specialists, and hospitals. (Department of Health and Aged Care, 2024). It also means the adoption of research into policy and practice.

Co-production: A way of working whereby citizens and decision makers, or people who use services, family carers, and service providers work together to create a decision or service which works for them all. The approach is value driven and built on the principle that those who use a service are best placed to help design it (Social Care Institute for Excellence, 2022).

Policy-relevant research: Policy relevant research refers to how effectively research findings inform decisions made by decision-makers. In other words, policy relevance is determined by how applicable and practical research findings are to decisions that need to be made on policy priorities (PolicyWise, 2021).

Implementation science: 'Implementation science is the study of methods to promote the adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings to improve the impact on population health.' (University of Washington, 2021).

Evidence based policy: Evidence-based policies is a decision-making process which combines deductive logic with statistical analysis to inform policy decision making (Palangkaraya et al., 2012).

Participatory research: Participatory research (PR) encompasses research designs, methods, and frameworks that use systematic inquiry in direct collaboration with those affected by an issue being studied for the purpose of action or change (Vaughn & Jacquez, 2020).

Know-do gap: The "know-do gap" is a new term to describe an old problem: the gap between what we know and what we do in practice (Pakenham-Walsh, 2004).

Translational science: "The process of turning observations in the laboratory, clinic, and community into interventions that improve the health of individuals and populations – from diagnostics and therapeutics to medical procedures and observational behaviours" (Georgia CTSA, 2021).

Gap analysis: Involves understanding and identifying the difference ('gaps') between evidence and actual practice or policymaking; needs assessment at the population, organisation, and/or care-provider level is performed to determine the size and nature of the gap.

Commercialisation: Commercialisation is the process of bringing new products or services to market. The broader act of commercialisation entails production, distribution, marketing, sales, customer support, and other key functions critical to achieving the commercial success of the new product or service (Kenton, 2020).

(research) Engagement: Connecting with and involving non-academic communities throughout the research and translation processes (University of Melbourne Knowledge Network, 2016).

Impact: The consequences, actions or knowledge-contributions measurably attributable, at least in part, to a particular source.



Appendix B: HEAL Innovation Fund Case Studies

Case Study 1: Developing culturally responsive household food security indicators

Author(s): Caroline Deen, Fraser Nai, Max Fabila, Sinead Boylan, Audrey Henry, Simone Sheriff, Michelle Dickson, Julie Brimblecombe, Francis Nona, Alana Gall, Sharna Motlap, Linda Ford, Veronica Matthews.

Keywords: Indigenous Food Security, Community Led Research, Aboriginal and Torres Strait Islander Health and Wellbeing.

Summary: This case study profiles a community led partnership with Bundjalung Tribal Society and the Gur A Baradharaw Kod Torres Strait Sea and Land Council (GBK) to develop culturally responsive food security indicators for Aboriginal and Torres Strait Islander peoples. Guided by Indigenous governance groups, the research applies group model building to map cultural, ecological, social, policy and market determinants of food security while privileging community led solutions. Knowledge translation is embedded through development of community-led Indigenous food security measurement indicators and ongoing engagement with the National Aboriginal Community Controlled Health Organisation (NACCHO), National Indigenous Australians Agency (NIAA), Health and Wellbeing Queensland and NSW Health. A core challenge is translating place based Indigenous knowledge into national and state policy relevant outputs while safeguarding community control of data and Indigenous cultural and intellectual property. We are addressing this through early engagement, community research partnership agreements and flexible, co designed dissemination.



Image: Group model building workshop, Masig Island, September 2025.



Image: Masig Island community members, September 2025

Section 1: Overview of Research and Knowledge Translation

This project develops culturally responsive food security indicators for Aboriginal and Torres Strait Islander peoples. The project is applying group model building with community members to map cultural, ecological, social, policy and market determinants of food security based on place-based lived experiences. Indigenous research governance groups guide all steps of the research and knowledge translation process, aligning methods and outputs with community priorities and policy needs. Partners include Bundjalung Tribal Society, GBK, and government stakeholders. The project is in the implementation phase and planning dissemination to support policy uptake of final indicators and practical tools for monitoring and evaluation.

Section 2: Best Practice Knowledge Translation

This research uses a community led Knowledge Translation (KT) approach emphasising collaboration, trust, co design and action oriented outcomes. It responds to a need for culturally responsive food security indicators and a policy need to appropriately monitor food security strategies in Australia.

Indigenous governance groups in each location have led the work from inception, ensuring relevance to local priorities and knowledge systems. Community participation includes employing local research officers and community-based group model building workshops that collaboratively map food security determinants. This systems approach highlights areas amenable to community led solutions, broadening the focus beyond development of food security indicators alone.

Government and policy stakeholders including NACCHO, NIAA, Health and Wellbeing Queensland and NSW Health, receive regular briefings to align methods and outputs with policy and program implementation and evaluation needs while maintaining community ownership.

Clear, context specific communication includes plain language materials and culturally appropriate dissemination: community feedback sessions, policy briefs, artwork and videos. Formal partnerships with Bundjalung Tribal Society and GBK underpin long term relationships, support capacity, and create pathways for future collaboration.

The project also functions as a pilot across two settings, allowing for refinement and scalability to other locations. An exchange based KT strategy embeds co design with communities, continuous dialogue with policymakers, and shared decision making—to strengthen translation into practical tools that can inform monitoring, evaluation and responsive policy.

Section 3 – Pathways to Outcomes

The KT approach set the trajectory by building trusted relationships with communities and local stakeholders, creating opportunities for future research driven by community priorities and enabling spill over benefits such as strengthened partnerships and co design capacity. It shifts policy conversations by opening space for an Indigenous designed food security measurement tool and reframing dialogue toward Indigenous food sovereignty. Although formal policy change is not yet visible, strong partnerships with government and stakeholders position the research to influence health and system outcomes. By connecting community experiences of climate and food system disruption with policy levers and program design, the project is shifting the landscape toward Indigenous led solutions and asserting cultural knowledge as a foundation for resilient and sustainable food security.

Case Study 2: Paving the way towards building resilience: co-designing a climate-resilient aged-care community

Author(s): Patricia Lee, Connie Gan, Sebastian Isbanner, Rachael Madders, Ishani Majmudar, Peter Hennessy, Dung Phung, Scott Baum

Summary: This project explored climate-related health vulnerabilities among older adults living in Brisbane suburbs and co-produced adaptation strategies with Communiify, a community-based aged-care provider. Through qualitative interviews, focus groups, and a co-production workshop, older adults and Communiify staff were involved in identifying climate hazards, health impacts, service delivery challenges, and opportunities to strengthen climate resilience. The community engagement was channelled through a meaningful partnership with key informants (several Communiify managers in age-care related services) to identify stakeholders and inform data collection and strategy co-production processes. The Knowledge Translation approach centred on leadership support, community engagement in issue identification, and integrating community needs and priorities into feasible strategies such as community response centres and climate-aware home care practices. While still at an early stage, these partnerships position the project for future strategy implementation and policy engagement, laying a foundation for improving climate preparedness among ageing populations.

Section 1: Overview of Research and Knowledge Translation

This project aimed to investigate climate-related health vulnerabilities among older adults living in Brisbane suburbs and co-developed strategies to strengthen climate resilience. In partnership with Communiify, a community-based aged care provider, we conducted focus groups, semi-structured interviews, site observations, and a codesign workshop with older adults living in the community, aged-care staff and volunteers. The research identified climate hazards, health impacts, coping practices, and gaps in support systems. Knowledge translation (KT) was embedded throughout, ensuring the alignment of project goals with Communiify's organisational values and support services for their senior clients, involving key informants (high-level management, staff working in aged-care services) in project planning and stakeholder identification, and engaging stakeholders in project activities to inform collaborative process to generate locally relevant adaptation strategies.

Section 2: Best Practice Knowledge Translation

The pilot project embedded KT through sustained partnership-building with Communify, whose clients were predominantly socioeconomically disadvantaged with poor housing, financial hardship, and social isolation, heightening their climate-related vulnerabilities. The research team initiated two meetings with Communify's CEO and several managers responsible for aged-care services, establishing strong leadership support and commitment that underpinned effective community engagement. Early engagement with senior managers secured organisational buy-in, built trust, clarified organisational priorities, and enabled meaningful engagement with key staff. These staff members guided participant recruitment, contributed contextual insights, and supported the iterative interpretation of preliminary findings. This collaborative approach ensured the research remained closely aligned with service realities and community needs.

Our engagement with senior managers and key staff helped us understand Communify's organisational dynamics, community-based aged-care services/support, and existing collaborations with other NGOs, which collectively support older adults through food relief, home-based support, and wellbeing programs. These insights were critical in shaping a KT approach that was realistic, need-based, and action-oriented. Our methodological approach enabled participants to articulate climate-related health risks and challenges such as heat stress, disrupted sleep, service interruptions, access barriers during floods, safety risks, and the emotional toll of recurring events. These experiences were interpreted alongside Communify's operational knowledge, allowing the research team to contextualise findings within existing service networks and resource limitations.

The co design workshop prioritised three interconnected themes: intensifying climate events, limited organisational/government support, and health impacts, and generated actionable strategies grounded in community needs. These included establishing community response centres with dedicated funding, enhancing collaboration with partner NGOs, embedding climate considerations into home based care, and ensuring older adults' direct involvement in preparedness and recovery planning.

Section 3: Pathways to Outcomes

Our KT approach shaped the pilot project by grounding it in the lived experiences of older adults and relevant stakeholders and incorporated Communify's operational realities, creating synergies that extended beyond research into service planning and resource coordination. Codesign strengthened shared ownership of the findings and generated practical adaptation strategies that Communify can pilot within its existing networks. The research team intended to involve Brisbane City Council and Queensland Disaster, Emergency Management Authority and relevant NGOs in providing further insights into more actionable strategies. Due to time constraints, government agencies were not involved. Nevertheless, the process produced evidence and community-driven priorities that can inform future policy recommendations and funding proposals. These collaborative foundations position the project to influence longer-term health and service outcomes, with sustainability dependent on continued partnerships and resourcing.

Case Study 3: Changes to Country, changes to wellbeing: Translating Indigenous-led research into climate adaptation pathways

Author(s): Lauren Tynan, Kate Sollis, Kanchana Wiset, Jess Riley, Emily Flies, Rob Anders

Keywords: Indigenous-led research; Knowledge Translation; Climate adaptation; Wellbeing

Summary: This case study describes a participatory research project led by the Melaythenner Teeackana Warrana Aboriginal Corporation (MTWAC), examining how environmental changes are impacting community-defined wellbeing and how this knowledge supports locally-driven adaptation planning. The project facilitated cross-cultural knowledge translation and importantly, through the community workshops and yarns, intergenerational knowledge sharing between elders and young community members. Therefore, a major outcome of the research was the relationship and capacity building both within the community and between community members and non-Indigenous researchers. A key challenge to achieving these outcomes was balancing academic and community timelines, priorities, and knowledge systems; this was addressed through shared governance and relational accountability.

Section 1: Overview of Research and Knowledge Translation

This Indigenous-led project explores how climate change is affecting wellbeing as defined by the Tebrakunna Aboriginal community in north-east Tasmania. The research builds on an existing co-designed wellbeing framework developed and designed by the community with funding from the NESP Sustainable Communities and Waste Hub. Community workshops, yarning and on-Country engagement were used to share knowledge and collect data, and findings are being synthesised into community-owned reports, artwork and adaptation planning tools. Knowledge translation is occurring throughout the project, including in the data collection phase (cross-cultural and inter-generational knowledge sharing) and through the co-design of culturally appropriate outputs including Indigenous artwork, infographics-focussed reports, and an academic article. The major data collection is completed and the project is currently in the analysis phase.

Section : Best Practice Knowledge Translation

Knowledge Translation in this project is grounded in Indigenous leadership, collaboration, and co-design. The project was initiated through an existing partnership between MTWAC, University of Tasmania (UTAS), and the NESP Sustainable Communities and Waste Hub. Pre-existing relationships and governance structures, including a research contract between

MTWAC and UTAS, Indigenous-led steering committee and ethics provided a foundation of trust and framework for the project. MTWAC leads decisions on research priorities, methods, data collection/storage and communication of findings, ensuring Indigenous Data Sovereignty and protection of Indigenous Cultural and Intellectual Property.

The project builds long-term relationships rather than one-off engagement, with regular project team and steering committee meetings, multiple on-Country workshops, leadership by Indigenous researchers, within-community inter-generational knowledge sharing and capacity building for non-Indigenous researchers to learn Indigenous research methods, and cultural expectations. Knowledge Translation is framed as an exchange process rather than simple dissemination. Non-Indigenous researchers are expected to bring their own skills in project management, topic expertise and institutional knowledge to help support Indigenous community-led decisions. This reciprocal learning reinforces knowledge translation as a two-way process. Community engagement is continuous, relational, and central to every stage of design, implementation and dissemination.

Outputs are co-designed and deliberately tailored to fit audience needs: Indigenous-commissioned artwork, and engaging infographics will be central to both the community-focussed report and the academic publication to support greater accessibility. Together, these approaches reflect a combination of exchange-based strategies and targeted dissemination, designed to ensure relevance and usability.

Section 3: Pathways to Outcomes

The Knowledge Translation approach has fundamentally shaped the trajectory of this project by positioning the research as a tool for community connection, relationship-building and knowledge sharing. Co-design and Indigenous governance have created opportunities for the process and findings to strengthen community relationships and agency, and support longer-term partnerships beyond the life of the grant. Non-Indigenous researchers have learned to prioritise relationship building and active listening and to push back on outcomes and timelines when they don't align with community needs. The project has also opened pathways for further collaborations between MTWAC and non-Indigenous researchers (pending community approval), positioning the work to inform broader conversations about climate, wellbeing, and Indigenous-led approaches. Longevity is supported through strong relationships, community ownership of outputs, and future funding pathways already identified by the team.

Case Study 4: Identifying research needs and building research capacity towards heat health action in Australia

Author(s): Rutherford, S., Bacon, E., Bentley, R., Campbell, S., Mathew, S., Morgan, G., Oberai, M., O'Connor, F., Rajagopalan, P., Wyrwoll, C.

Keywords: synthesis, evidence base, extreme heat, human health

Summary: This case study examines Australia's heat health challenge and explores research translation via multiple activities designed to enable diverse participatory engagement and synthesis of the Australian heat-health research landscape. The project adopts a knowledge translation approach that combines stakeholder engagement, knowledge synthesis, and targeted dissemination to support shared understanding and action. Key knowledge translation outcomes include an articulation of the problem complexity, clearer national practice-based research gaps and priorities, expanded networks, and opportunities for policy relevant conversations. These outcomes reflect a combination of exchange and push knowledge translation strategies, supporting both collaborative learning and broader dissemination. Challenges included navigating fragmented research efforts and ensuring sharing of diverse cross-sectoral actions- addressed through multidisciplinary workshops and targeted participation. An ongoing challenge is identifying a suitable platform to enable widespread dissemination and use of the project's outputs, highlighting a gap in sustained knowledge translation infrastructure.

Section 1: Overview of Research and Knowledge Translation

This project focuses on translating secondary data into practice by examining diverse heatwave actions and mapping heat-health research for Australia. It aligns with four HEAL Research Themes—Bushfires, Air Pollution & Extreme Weather Events; Urban Health & Built Environment; At-risk Populations & Life Course Solutions; and Rural & Remote Health. The project is designed to inform decision-making and coordinated action by bringing together the research and researchers, policy makers, practitioners, and people with lived experience. This reflects an integrated knowledge translation approach, where stakeholders are engaged to co-develop a shared understanding of the extreme heat challenge, knowledge gaps and needs for the response ecosystem. Through this process, the project aims to influence collective engagement, the work will influence action and appropriate collective engagement to protect at-risk populations.

Section 2: Best Practice Knowledge Translation

Central to this approach is the deliberate engagement of stakeholders across research, policy, practice, and community sectors spanning climate, health, disaster, planning, and the built environment.

This project embodies knowledge translation strategies through a combination of exchange, push, and capacity-building. Central to this approach is the deliberate engagement of stakeholders across research, policy, practice, and community sectors across climate, health, disaster, planning and built environment. Two activities anchored exchange-based knowledge translation strategy: A visualisation workshop that used interactive, real-world stimuli to explore how different groups understand extreme heat risks and responses (40 participants). This activity facilitated shared problem framing and supported the translation of diverse perspectives into a common understanding. and A national workshop that convened policymakers, practitioners, researchers, and community organisations to share priorities, identify gaps, and shape future translation pathways (56 participants). This workshop functioned as a structured platform for knowledge exchange, enabling reciprocal learning and identifying how researchers can work better to embed research evidence into policy and practice contexts. This can be done via shared platforms and national co-ordination e.g. national symposia, cross sector knowledge exchanges, use of common terminology.

In parallel, systematic mapping of the heat-health research landscape in Australia will identify key disciplines, overlaps, partners, solution areas, and knowledge gaps to inform future research investment and strengthen collective action. Dissemination has included communication of outputs (visualisation workshop) via HEAL LinkedIn to coincide with the Australian heatwave season and Extreme Heat Awareness Day. Further dissemination will target the HEAL and international research community, relevant policy and practice networks, and the broader public

While extensive community engagement is not a core project feature, community voices are incorporated through researcher experience working with diverse groups and community representation on the project team, lived-experience representatives (including older-Australians and First Nations participants) and NGOs invited to events. Capacity building is supported through active involvement of HDRs and ECRs across project activities reflecting an additional knowledge translation function of strengthening skills and capability for research-policy-practice engagement.

Section 3: Pathways to Outcomes

The Knowledge Translation approach taken has strengthened pathways from evidence to action by linking engagement, synthesis, and dissemination activities. The visualisation workshop translated multidisciplinary expertise into shared, actionable insights, fostering a common understanding of heat impacts across the life course. LinkedIn dissemination with high engagement expanded the project's reach and activated new networks. The national workshop was intentionally designed as an interactive exchange mechanism with group activities and informal side conversations between researchers and policymakers revealing practical opportunities to embed evidence into decision-making. These interactions-coupled with systematic mapping, open new avenues for collaboration, clarify translational barriers, and strengthen opportunities for national heat risk-resilience coherence via a clear translation pathway (Figure below)).

