

Connecting Two Worlds

enhancing knowledge sharing between academics and policymakers in Aotearoa New Zealand

Abstract

The Covid-19 pandemic has put the research–policy interface in the spotlight, exposing the synergies and tensions between research and policy. The complexity of responding to Covid-19 has also highlighted the potential for research to inform responses to other major societal challenges. Researchers are enthusiastic about working with policymakers to ensure that policy is underpinned by robust evidence, while many in government see the importance of strong evidence underpinning policy. However, there are also significant challenges associated with connecting the complex domains of universities and central government.

Keywords research–policy interface, evidence-informed policy, knowledge sharing, chief science advisors, public policy

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The Covid-19 pandemic has put the research–policy interface in the spotlight as government responses around the world draw on expert advice, on issues from modelling and vaccinations to youth mental health and misinformation, to manage the pandemic (Ball, 2021). Research has informed and shaped prevention and treatment methods, as well as approaches to tackling wider social and economic issues beyond the health sector (Geoghegan et al., 2021; Williams et al., 2020). In Aotearoa New Zealand there are positive signs of effective engagement at the research–policy interface. Most researchers are enthusiastic about working with policymakers to ensure that policy is underpinned by robust evidence. They see the value in their research being used to inform important policy decisions that will affect the day-to-day lives of New Zealanders (Hendy, 2022). The recent emphasis on impact across the university sector globally is good news for research-informed policy, with universities increasingly expected to demonstrate the ‘real world’ impact of their research on society (Gamoran, 2018). Many in government see the importance of strong

evidence to underpin policy and there are some excellent examples of collaboration leading to stronger, evidence-based policy advice. Importantly, there is an opportunity to build on current high levels of trust in science among New Zealanders (Morton, 2021).

In the Aotearoa context, there is a broad spectrum of expertise located across the research, science and innovation system. Aotearoa has eight universities, seven Crown research institutes¹ and 18 independent research organisations.² Aotearoa also has an independent national academy of sciences. The Royal Society Te Apārangi is a non-governmental organisation representing individual researchers and their professional societies who make up the research community. Aotearoa also has strong links with the International Network for Government Science Advice, providing access to the global science–policy interface and opportunities to improve the potential for evidence-informed policy formation at sub-national, national and transnational levels. This rich ecosystem of expertise offers enormous potential to address the complex challenges facing Aotearoa. However, maximising this potential is highly dependent on greater engagement and knowledge sharing between researchers and policymakers in both local and regional and central government.

Importantly, Aotearoa's unique cultural context must be properly acknowledged and respected to create a research–policy interface that is enabled by, and responsive to, te Tiriti o Waitangi and mātauranga Māori. The current system has drawn criticism for not providing adequate opportunities for Māori to influence the science–policy interface, and there have been calls to adopt a Tiriti-led science policy approach in order to truly enhance societal well-being and tackle the complex issues facing Aotearoa (Kukutai et al., 2021). There is an urgent need to strengthen the evidence base by incorporating te ao Māori and ensuring that our science advice is responsive to the diversity of our community. This means ensuring that science advisors are representative of Aotearoa's diversity (Jeffares et al., 2019).

The focus of this article is on overcoming the challenges associated with connecting

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the complex domains of academia and central government. While we recognise the broad and diverse range of research entities in Aotearoa, as well as the value in knowledge sharing between different levels of government, the scope of this article is limited to universities and central government. The article is one output from a fellowship with the Office of the Prime Minister's Chief Science Advisor, undertaken to contribute a wider context to a joint project between the prime minister's chief science advisor, Universities New Zealand and the Department of the Prime Minister and Cabinet. The overarching aim of the project was to expand knowledge on potential approaches to strengthening the two-way flow of knowledge between university academia and policymakers in central government. This involved scanning the national and international landscape and conducting in-depth interviews with leading experts both within Aotearoa and in other jurisdictions. The aim was to identify best practice in establishing constructive two-way relationships between academia and policymakers and enhancing opportunities for knowledge sharing.

The project was divided into two stages. Stage one was a desktop review of current international developments in the

academic–policy interface. Stage two involved targeted, in-depth qualitative interviews with New Zealand and international experts in this area:

- mid–senior policymakers in New Zealand central government departments (10);
- chief science advisors in New Zealand central government departments and agencies (10);
- a former scientific advisor to the European Commission;
- a former chief international science envoy at the UK Foreign, Commonwealth and Development Office;
- the head of science systems and academic engagement in the UK Government Office for Science;
- the Australian chief scientist;
- the Victoria government lead scientist;
- the director of expert advice and publishing, Royal Society Te Apārangi;
- New Zealand academic experts in public policy (7); and
- international academic experts in public policy (3).

A key focus of the study was to present a set of solutions that are implementable in the Aotearoa New Zealand environment. Here, we discuss some of the barriers and enablers at the research–policy interface, before concluding with a set of high-level recommendations for universities and government to consider.

Barriers to better use of evidence and expertise in policymaking

A review of the literature reveals that there are a number of key issues in strengthening knowledge sharing between university academics and policymakers.

Knowledge of public policy process

Lack of understanding of the formal and informal aspects of policymaking can act as a barrier to collaboration between researchers and policymakers. Policymaking can be complex, non-linear, and subject to the vagaries of the political cycle, with policymakers required to take into consideration a broad range of factors when developing policy, over and above research results (Hudson, Hunter and Peckham 2019). Researchers are often not policy literate and can fail to understand

the complexity of the policy environment (Hetherington and Phillips, 2020). Researchers typically receive little training on the inner workings of government, public policy, or communicating research findings to policymaker audiences. The complexity of the policy cycle means that there are times when government will be very open to new ideas and evidence, and others when research or ideas will struggle to get traction (Cairney and Kwiatkowski, 2017). Policymakers often make decisions in a complex environment with limited time for reflection. In contrast, research often gives much more complex answers to long-term challenges (Koolen-Bourke and Peart, 2022).

Skill sets of researchers and policymakers

Influencing policy requires a specific skill set that is separate from other research skills (Oliver and Cairney, 2019). Increasingly, researchers need to be able to write for and speak to a range of audiences. Bridging the disconnect between the language of academia and the language of policymakers is one such skill. Influencing is another critical skill, often requiring a lengthy process of convincing a range of advisors, politicians, select committees, think tanks and pressure groups that help determine which policies do and don't get taken forward (ibid.). Importantly, many research institutions do not prioritise the development of these key skills, or incentivise or reward collaboration with policymakers (Jessani et al., 2020). This is particularly the case for early career researchers, who are often discouraged from engaging in policy work until their career is firmly established. Tenure and promotion criteria in universities still mostly favour publications in academic journals rather than policy briefs and other activities that aim to influence policy (Walker et al., 2019).

Conversely, policymakers often lack the skills to interpret science effectively and rigorously for their purpose, including understanding the quality, limitations and biases of evidence (Oliver and Cairney, 2017). Policymakers may look to scientists to provide certainty. This can lead to situations where researchers may not disclose the full weight of uncertainty in their assumptions and results, or may be

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unaware of it, or not know how to communicate it to policymakers. Understanding the limitations and the context of research and researchers and the ability to scrutinise evidence are critical skills for policymakers (Arndt et al., 2020).

Structural and cultural issues in academia and government

In both academia and the public service there are structural and cultural issues that create barriers even where there is great willingness to engage. In government, some departments lack clear protocol on how officials should engage with academics or for how they assess and use evidence and expertise. Unclear lines of responsibility also hinder the establishment of relationships with researchers and universities (Sasse and Haddon, 2018).

Reward systems in government and academia are also frequently incompatible. Promotion criteria in many universities

often fail to reward a broader range of academic activities beyond scholarly publication, including informing policy (Arndt et al., 2020). Researchers' need to publish can be impeded by the policymaking process, in which control over flow of information may be necessary to manage policy change among diverse stakeholders. Conversely, many government departments do not actively encourage involvement of their staff in research (Sasse and Haddon, 2018). Organisational cultures and practices in government departments that value expertise and rigorous evidence are critical to encouraging links with academics (Head, 2016). Senior staff are influential in setting the culture of departments and how they engage with academia.

Strength of relationships

Relationships are central to a successful policy–research interface (Gluckman, 2014; Cvitanovic and Shellock, 2021). In government, high staff turnover and lack of institutional memory within policymaking agencies frequently 'resets' the science–policy relationship, with significant resources required to continually redevelop trusted relationships (Lacey et al., 2018). Researchers and policymakers collaborating to work through problem formulation and solutions can increase research-informed policy advice. However, this type of productive collaboration requires strong underlying relationships which act to lower barriers on both sides (Ausden and Walsh, 2020).

While relationships and trust are central to successful engagement at the interface, there are also risks associated with policymakers forming a reliance on a small group of experts, rather than drawing on advice from a broad range, especially when contentious or difficult issues are involved. Limiting interactions to a trusted few can limit the opportunities to challenge ideas and draw on a diversity of perspectives (Cairney and Wellstead, 2021).

Options for strengthening the research–policy interface

The results of this study's online surveys, focus groups and in-depth qualitative interviews with experts in Aotearoa and overseas revealed a multitude of

opportunities to strengthen the research–policy interface. Some are initiatives that have been implemented successfully in other jurisdictions; others are suggestions from researchers or policy experts working at the interface. They range from relatively simple initiatives, to actions aimed at addressing broader systemic issues. The results provide a range of ideas to ponder, and consider how they might fit the Aotearoa context and how they might be resourced to have an ongoing positive impact on strengthening the interface.

This study acknowledges and builds on the work of the inaugural prime minister’s chief science advisor, Professor Sir Peter Gluckman (Gluckman, 2013). While considerable progress has been made, the use of evidence in the policy process remains highly variable (Gluckman, Bardsley and Kaiser, 2021) and, despite interest and motivation to engage on both sides, the mechanisms to enable effective engagement are often ineffective.

The challenge of bridging the two worlds was a dominant theme throughout this project. Commentary among policymakers centred around the inability of researchers to understand the constraints and complexities of the policy context. Similarly, researchers spoke of the scarcity of research skills among policymakers, a lack of rigour around how they used research results, and a tendency to look for research that supports predetermined conclusions rather than open inquiry (Koolen-Bourke and Peart, 2022). This mutual lack of understanding, along with a ‘clash of cultures’, were considered key barriers.

Ideas for government

Many academics in Aotearoa want to see their research informing the direction of government policy and having an impact. As a profession, researchers are more driven by purpose rather than money or status than many other professions, highlighting the deep motivation among most researchers to make a difference to society (Leeming, 2018). As witnessed during the Covid-19 pandemic, there is huge scope to leverage the knowledge and skills within academia and ensure that government policy is underpinned by the latest research. Here we offer some suggestions for how government can

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help to overcome the barriers to active engagement and strengthen relationships between policymakers and researchers.

Ease of access to relevant officials

To the outsider, the inner workings of government can be mystifying. Researchers commented on how difficult it was to understand the roles and responsibilities within individual ministries, or how to contact relevant policy officials. In an attempt to bridge the two spheres, the UK Office for Science recently appointed a strategic academic engagement manager, tasked with strengthening the office’s engagement with the university sector. While it is not feasible to provide contact details of policymakers across government, providing one point of contact for each policy area is one proposed solution. In addition, ensuring that there is a chief science advisor or principal scientist in each agency responsible for bridging the research–policy interface across the range of policy domains would be beneficial.

Manage high turnover of policymakers

In Aotearoa, policymakers are incentivised to move around agencies, with junior policymakers often changing roles after 14 months. While this movement allows

policymakers to develop breadth of policy knowledge, it discourages the development of deep policy expertise and sector relationships. One chief science advisor commented that knowledge and expertise in a particular area can be a game changer, with policymakers becoming more valuable as their subject matter knowledge improves. The high churn among policymakers is problematic for researchers and chief science advisors when success at the research–policy interface hinges on trust-rich relationships and depth of subject matter expertise. Mitigation strategies could include ensuring that researcher contacts/relationships are retained and shared when a policymaker moves to another role. Government could also consider offering a specialist pathway to policymakers interested in developing deep expertise in a particular policy area.

A clear, public-facing research agenda

Both policymakers and researchers see the value of explicitly stating priority research areas for government agencies. Identifying priority policy areas gives researchers (including postgraduate students) the option of prioritising their research in areas aligned with government policy. A model for this can be found in the UK, where published ‘areas of research interest’ provide details about the main research questions facing government departments (UK Government, 2022). A public-facing strategic research agenda demands that ministries and agencies develop clearly defined priority areas and ensure that research questions are well articulated. This has the potential to create greater awareness and alignment across government. Departmental chief science advisors could play a pivotal role in helping ministries and agencies shape their research agendas. For example, some government departments have prepared research roadmaps, drawing on stakeholder consultation and with guidance and input from chief science advisors.

It is important to note that the success of such initiatives relies on follow-up and monitoring of implementation and progress. Under the Public Service Act 2020, all New Zealand government departments are required to put together a long-term insights briefing for government. The briefings are an opportunity to stimulate

greater engagement with and input from academia, but they are not well understood within the university sector and would benefit from greater promotion.

Funding for policy research

Lack of ability to fund strategic research to support policy in a timely fashion was highlighted as a barrier. The usual grant cycle can be an obstacle to generating research that aligns with political time frames. In some cases, the inability to commission research specific to Aotearoa leads to an over-reliance on international literature, which may not be applicable, at the expense of place-based research. There is the view among some chief science advisors and policymakers that relatively small amounts of money could be used to pump-prime areas that are under researched but of high strategic priority.

Opportunities for academics to connect with and contribute to the policy agenda

Researchers spoke of the difficulty in finding ways to connect with and feed into the policy agenda, particularly those located outside Wellington. To overcome what some dubbed the ‘Wellington advantage’, chief science advisors, policymakers and senior officials should schedule regular visits to universities and other research organisations as a way of sharing research and discussing policy priorities. An exemplar of this approach is the Ministry of Transport’s annual workshops. The transdisciplinary nature of transport research means that expertise is located in a wide range of departments and faculties. In response to this challenge, the Ministry of Transport and the New Zealand Transport Agency conduct annual workshops across the country. The workshops are an open invitation for researchers interested in transport to connect with ministry staff and learn about government research and policy priorities, while also providing an important opportunity for ministry staff to learn about transport-related research currently taking place in universities.

Leadership and a strong authorising environment

Without the expectation of evidence-informed policy at the top, initiatives at

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the coalface may struggle to gain traction. Senior leadership needs to demand a high standard of evidence in submissions and incentivise basing policy on strong science and research. The authorising environment within ministries plays a key role in signalling the importance of research-informed policy; senior leadership needs to signal the contribution of research and evidence to the wider public service effort. While there are existing mechanisms in place to ensure that Cabinet papers demonstrate underpinning evidence, they need to be reinforced and adhered to.

Strengthening policy evaluation

Evaluation helps governments improve policy design and implementation, promotes greater accountability, and increases public sector effectiveness through improved decision making (OECD, 2020). However, interviews with policymakers and senior bureaucrats suggest that policy evaluation is inconsistent, and on occasion subject

to bias. While recognising the need to factor in the political context, promoting transparent policy evaluation is considered integral to enhancing the quality of policy in Aotearoa. Policy evaluation is currently carried out internally or by external consultancies and think tanks. There is scope to draw on academic expertise to ensure that government policy is subject to rigorous evaluation.

Secondments, internships, fellowships and scholarships

Direct partnership via secondments, internships, fellowships and scholarships is an excellent way to increase understanding between academia and policymakers (Walker et al., 2019). There are a range of models, including fellowships, fractional appointments, policy postdocs and student internships. Fractional appointments allow researchers to work across the two spheres, maintaining active connections and bringing other researchers into government, and vice versa. Well-defined secondments structured around a clear objective provide broad benefits to both parties. The UK Office for Science has used secondments to great effect, notably as part of the Rebuilding a Resilient Britain project (Boaz and Oliver, 2020).

Scholarships, fellowships and internships can also boost policy awareness among postgraduate students, encourage ongoing engagement and expose them to a diversity of career paths. The Australian Science Policy Fellowship programme, an initiative of the Office of the Chief Scientist, has created a strong cohort of PhD-trained public servants, with 75% remaining in the government on completion of their fellowship (Australian Government, 2022).

There is also interest among policymakers in spending time in academia, providing early-career policymakers with the opportunity to develop and enhance skills in scientific enquiry, literature and evidence synthesis. Senior policymakers see the value in immersing themselves in a policy area in order to develop deep specialist skills and knowledge. The growing emphasis on transdisciplinary research across the research ecosystem, both in Aotearoa and globally, provides impetus for including policy stakeholders in research teams. Transdisciplinary

research is linked with improved decision making, networking and innovation and has the potential to strengthen both academic research and policymaking (Pohl, 2008; Jacobi et al., 2022). Expanding and strengthening interactions between academia and policy could ultimately weave the sectors more tightly together.

Value in multidisciplinary advisory groups

Advisory groups, expert round tables, panels and working groups provide government with access to the latest research and expert advice on a range of topics in Aotearoa and elsewhere. Members hold expertise, skills and/or experience relevant to a particular topic on which they provide advice. Expert advisory groups provide advice and insights from many disciplines, including the natural sciences, technology, medicine, engineering, the social sciences and the arts and humanities. Policymakers in our study highlighted the value and importance of having multidisciplinary teams with expertise and a diversity of viewpoints so that areas of disagreement were apparent.

The Behavioural Science Aotearoa Academic Reference Network was highlighted as an exemplar in the provision of multidisciplinary advice. The network of experienced Aotearoa- and Australia-based researchers and academics provides guidance and advice on the theory behind interventions in the justice system and the methodologies and analysis used to determine effectiveness. Another example of effective use of advisory groups is Australia's Rapid Research Information Forum, led by the Australian Academy of Science, which facilitated rapid information sharing and multidisciplinary collaboration within the research and innovation sector on Covid-19. The realisation that academics could provide current, timely advice was a game changer and resulted in the forum expanding to other government priority areas (Australia's Chief Scientist, 2020).

National academies have long held a central position in providing academic expertise to government decision making. National academies have strong and enduring local and international research and policy networks and draw on these networks to convene multidisciplinary

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expert panels when required. In Aotearoa, the Royal Society Te Apārangi plays an important role in providing expert advice on public issues to the government and the community. This is done via expert panels which include university academics. The Royal Society also convenes Speaker's Science Forums, which aim to raise awareness of the latest science among parliamentarians. While recognising the limitations posed by current resourcing, there is the view that the Royal Society could be more responsive to current policy agendas and issues of the day, and broaden its reach to include a more diverse range of community perspectives (Jeffares et al., 2019)

Strengthening the role of chief science advisor

Chief science advisors aim to bridge the realms of science and policy and are used in a number of jurisdictions, including the UK, Canada and Australia. There are two main models: individuals who are appointed to advise the prime minister, individual governmental ministers and/or departmental staff and management; and institutionalised or ad hoc expert committees that are established to provide science advice to government (Melchor, 2020). Chief science advisors are typically active scientists who work in either a

secondment or part-time role embedded within a government department.

This study revealed high levels of support for chief science advisors among policymakers and senior bureaucrats. Chief science advisors were described by one high-level government official as 'a force for good', bringing diverse ideas and values, networks, deep knowledge of their research domain and significant opportunities to connect externally to their agencies. They typically have a broad, roving mandate and import critical networks into government. Their role also sends a strong signal from government that science is critical to robust policy making. In the words of one senior bureaucrat, chief science advisors have been 'spectacularly helpful' in bringing a degree of rigour to decision making.

Despite widespread support, there is scope to strengthen the role of chief science advisors and their broader network. While they typically have some exposure to government prior to their appointment, there are strong arguments for more rigorous induction, with the UK model offering suggestions (Government Office for Science, n.d.). For example, they may benefit from training in areas such as 'soft power', communicating and influencing upwards, leadership, and learning the language and mechanisms of government. Chief science advisors must be prepared to engage in innovative thinking, extend their networks, and take on an active 'broker' role between research institutions and policymakers. Skills in diplomacy are also critical; they must learn when it is appropriate to nudge things along, and when to retreat. One of the few criticisms of chief science advisors was a perception of reliance on too small a network of academics. This highlights the importance of chief science advisors making deliberate attempts to expand their networks, consider a broader range of disciplines and go beyond the 'usual suspects', including consulting early career researchers.

Government hierarchy is a barrier to the success of some chief science advisors, with reporting lines dictating the level of influence. Our interviews revealed support for chief science advisors being part of the senior leadership team within their ministry or agency in order to have any

upward influence. To maximise their expertise, there need to be more opportunities for chief science advisors to give free and frank advice. They are not well known in some ministries, suggesting more opportunities to elevate their role and services to the wider policymaker community. Resourcing was also highlighted as an issue. The chief science advisor in the Ministry of Health described the significant benefits of extra resources during the Covid-19 pandemic as they went from an individual to a collective effort.

The lack of Māori science advice within government was flagged as an area of concern and has also been highlighted in a recent report, *Te Pūtahitanga: a Tiriti-led science-policy approach for Aotearoa* (Kukutai et al., 2021). Covid-19 has highlighted the need for greater Māori input and for a Māori-led response to the health crisis (Te One and Clifford, 2021). The same is true for Pasifika communities. While some advocate for a separate Māori advisor in each ministry and agency, others propose appointing a cluster of Māori advisors in the social and natural sciences to provide advice to relevant ministries.

Overall, there are compelling arguments to review the chief science advisor operating model to ensure that government is deriving maximum benefits from this highly regarded resource.

Ideas for universities

Academics face a number of barriers to working successfully at the research–policy interface (Gluckman, 2017; Cairney and Oliver, 2020). Working at the interface is time-consuming. Establishing and investing in relationships requires ongoing effort, as does developing policy-friendly research outputs. This is exacerbated by high staff turnover in the policy community. Often there is a tension between timeliness and rigour, with policymakers needing research findings immediately and academics needing time to collect, analyse and consult. In general terms, the lack of formal recognition

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of policy-related activities is a major disincentive.

Among policymakers there is the view that researchers do not have an adequate understanding of the policy context, time constraints, or the political implications of how research findings are presented. Policymakers spoke of the value of connecting with researchers who were skilled at making their research easily accessible and relatable to policy. In Aotearoa, the current review of the research, science and innovation sector provides a timely and valuable opportunity to highlight the value of research-informed policy, address longstanding issues and strengthen the research–policy interface (Ministry of Business, Innovation and Employment, 2021).

Recognise and reward policy engagement

For academics, the motivation to work at the research–policy interface comes from a combination of intrinsic and extrinsic factors. Intrinsic factors include the potential for policy engagement to enhance research, improve impact and make a change in the world. These are core drivers for many university researchers. Extrinsic factors include funder requirements and the institution placing value on

activities through promotion structures and other forms of recognition. There are suggestions that universities could do more to recognise and reward policy engagement which offers broad individual and institutional benefits, including stronger relationships with government, richer research and increased impact.

Adopt an 'NZ Inc.' approach to policy engagement

Expertise in many fields is spread across Aotearoa. In order to achieve critical mass and avoid duplication and unnecessary competition, researchers working in similar areas could, where appropriate, present a unified front when engaging with policymakers. By establishing a critical mass of expertise, researchers are more likely to gain the attention of policymakers. Chief science advisors could play an important coordination and engagement role. Importantly, bringing together research expertise to work on priority areas or issues will require resourcing.

Early, proactive, ongoing engagement

Early engagement with policymakers increases opportunities for researchers to influence policy (Sasse and Haddon, 2018). Often researchers are working in areas that are highly relevant to government priorities, but policymakers only find out about key research when proposals are fully formed and have been submitted to relevant funding bodies. There is an openness in many ministries and agencies to co-developing research projects with researchers in high priority areas. However, this approach hinges on early engagement.

Working at the policy interface requires academics to take a long-term view and anticipate issues. They must also be willing to provide advice at short notice and to tight deadlines, sometimes based on incomplete, but nevertheless relevant, scientific information. While this approach may conflict with the timescales and norms of academia, it reflects the imperfect realities of some government processes. Policymakers are motivated to keep up to date on emerging research in their field, highlighting the importance of researchers identifying relevant government agencies and proactively seeking out and engaging with policymakers. Finding ways to profile

research in the media is another way to gain the attention of policymakers. To successfully engage at the interface, researchers need institutional support, and universities should consider how to provide this support via their research office or technology transfer/research commercialisation office.

The importance of 'brokers'

The role of 'brokers' was a dominant theme in this project. 'Brokers' are an important part of how academic evidence and expertise enter policy. Knowledge brokerage in its most simplistic description is the process of effectively transmitting the results of evidence synthesis to the policymaker (Gluckman, Bardsley and Kaiser, 2021). Brokers were seen as critical to a flourishing research–policy interface, translating the language of research into the language of policy. Knowledge brokers combine knowledge and experience in academia with an understanding of policy, politics and impact. To be successful, intermediaries or knowledge brokers need to be skilled in understanding, categorising and synthesising evidence and research to ensure that the best research is informing policy, while at the same time understanding which policy levers are best suited to implement change (Goldfeld, 2010).

There is enormous value in those who sit within universities or central agencies and understand the nuances of both spheres (although there is a risk of 'gatekeeping', which would limit the range of advice heard). Brokers can leverage that

knowledge to influence and enable, build strong relationships, and ensure the successful translation of academic knowledge into a language that can inform and enhance policy decision making.

While there has been huge growth in the knowledge mobilisation profession, their contribution is often undervalued. Knowledge brokers lack career pathways and professional recognition. There is a general lack of understanding of the importance of key evidence champions who have a foot in both camps (Flinders and Chaytor, 2021).

Conclusion

Strengthening connections between researchers and policymakers is challenging. It requires finding new and creative ways to build understanding and engagement between two complex and disparate spheres, in ways that are mutually respectful and mana enhancing. However, if successful, this merging offers many benefits, including evidence-rich policy advice, ultimately leading to better outcomes for people and communities.

While there are barriers to engagement on both sides, there are also strong signs of a willingness to engage and a growing appreciation of the importance of research-informed policy. Among academics and policymakers there is a strong appetite to forge productive, reciprocal relationships. In some areas, an ecosystem of policy-capable academics working in tandem with policymakers already exists. There is a lot to be learned from areas where this

interface is working successfully. The role of chief science advisors is considered a vital resource, but one that has not yet achieved its full potential. Similarly, 'brokers' provide the opportunity to further leverage the potential in boundary-spanning roles.

Covid-19 has brought the importance of research, data, evidence and independent thinking to the fore. Aotearoa's science- and evidence-informed response to the pandemic is widely lauded as world-leading. The speed of the Covid-19 pandemic and its impacts have accentuated the importance and necessity of the policy–research nexus in dramatic terms. It has demonstrated the power of researchers drawn from many disciplines working closely with government, with an urgency characterised at times as a 'wartime' response. We need a similar urgency in 'peacetime' to tackle the raft of challenges facing Aotearoa now.

- 1 <https://www.mbie.govt.nz/science-and-technology/science-and-innovation/agencies-policies-and-budget-initiatives/research-organisations/cr/>.
- 2 <https://www.mbie.govt.nz/science-and-technology/science-and-innovation/agencies-policies-and-budget-initiatives/research-organisations/independent-research-organisations/>.

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References

- Andrews, L. (2017) 'How can we demonstrate the public value of evidence-based policy making when government ministers declare that the people "have had enough of experts"?' , *Palgrave Communications*, 3 (1)
- Arndt, E., M. Burgman, K. Schneider and A. Robinson (2020) 'Working with government: innovative approaches to evidence-based policy-making', *Conservation Research, Policy and Practice*, 216
- Ausden, M. and J.C. Walsh (2020) 'The use of evidence in decision-making by practitioners', *Conservation Research, Policy and Practice*, 145
- Australian Government (2020) 'Australian Science Policy Fellowship Program', <https://www.chiefscientist.gov.au/australian-science-policy-fellowship-program>
- Australia's Chief Scientist (2020) 'Rapid Research Information Forum 2020', <https://www.chiefscientist.gov.au/RRIF>
- Ball, P. (2021) 'What the Covid-19 pandemic reveals about science, policy and society', *Interface Focus*, 11 (6)
- Boaz, A. and K. Oliver (2020) 'Building new bridges between research and policy during a national lockdown', *LSE Impact Blog*, 27 November, <https://blogs.lse.ac.uk/impactofsocialsciences/2020/11/27/building-new-bridges-between-research-and-policy-during-a-national-lockdown/>
- Cairney, P. and R. Kwiatkowski (2017) 'How to communicate effectively with policymakers: combine insights from psychology and policy studies', *Palgrave Communications*, 3 (1)
- Cairney, P. and K. Oliver (2020) 'How should academics engage in policymaking to achieve impact?', *Political Studies Review*, 18 (2), pp.228–44
- Cairney, P. and A. Wellstead (2021) 'Covid-19: effective policymaking depends on trust in experts, politicians, and the public', *Policy Design and Practice*, 4 (1)
- Cvitanovic, C. and R. Shellock (2021) 'How to build and maintain trust at the interface of policy and research, insights from a century of boundary spanning', *LSE Impact Blog*, 5 July, <https://blogs.lse.ac.uk/impactofsocialsciences/2021/07/05/how-to-build-and-maintain-trust-at-the-interface-of-policy-and-research-insights-from-a-century-of-boundary-spanning/>

- Flinders, M. and S. Chaytor (2021) 'Lost in (the third) space: knowledge brokers need career paths too', *Times Higher Education*, 20 April, <https://www.timeshighereducation.com/opinion/lost-third-space-knowledge-brokers-need-career-paths-too>
- Gamoran, A. (2018) 'The future of higher education is social impact', *Stanford Social Innovation Review*, https://ssir.org/articles/entry/the_future_of_higher_education_is_social_impact
- Geoghegan, J.L., N.J. Moreland, G. Le Gros and J.E. Ussher (2021) 'New Zealand's science-led response to the SARS-CoV-2 pandemic', *Nature Immunology*, 22 (3), pp.262–3
- Gluckman, P. (2013) *The Role of Evidence in Policy Formation and Implementation: a report the prime minister's chief science advisor*, <https://apo.org.au/node/65609>
- Gluckman, P. (2014) 'Policy: the art of science advice to government', *Nature*, 507 (7491), pp.163–5
- Gluckman, P. (2017) *Enhancing Evidence-informed Policy Making*, Wellington: Office of the Prime Minister's Chief Science Advisor
- Gluckman, P.D., A. Bardsley and M. Kaiser (2021) 'Brokerage at the science–policy interface: from conceptual framework to practical guidance', *Humanities and Social Sciences Communications*, 8 (1)
- Goldfeld, S. (2010) 'The art and science of influence: reflections from the boundary', in G. Bammer (ed.), *Bridging the 'Know–Do' Gap: knowledge brokering to improve child wellbeing*, Canberra: ANU Press
- Government Office for Science (n.d.) *Rebuilding a Resilient Britain*, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/964788/ARI_Summary.pdf
- Head, B.W. (2016) 'Toward more "evidence-informed" policy making?', *Public Administration Review*, 76 (3), pp.472–84
- Hendy, S. (2022) 'Integrating science into policy: experiences during the pandemic', *Policy Quarterly*, 18 (1), pp.38–43
- Hetherington, E. and A.A. Phillips (2020) 'A scientist's guide for engaging in policy in the United States', *Frontiers in Marine Science*, 7
- Hudson, B., D. Hunter, and S. Peckham (2019). 'Policy failure and the policy-implementation gap: can policy support programs help?' *Policy design and practice*, 2(1), 1-14.
- Jacobi, J., A. Llanque, S.M. Mukhovi, E. Birachi, P. von Groote, R. Eschen, I. Hilber-Schöb, D.I. Kiber, E. Forsard and C. Robledo-Abad (2022) 'Transdisciplinary co-creation increases the utilization of knowledge from sustainable development research', *Environmental Science and Policy*, 129, pp.107–15
- Jeffares, B., J. Boston, J. Gerrard, S. Hendy and W. Lerner (2019) 'Science advice in New Zealand: opportunities for development', *Policy Quarterly*, 15 (2), pp.62–71
- Jessani, N.S., A. Valmeekanathan, C.M. Babcock and B. Ling (2020) 'Academic incentives for enhancing faculty engagement with decision-makers: considerations and recommendations from one school of public health', *Humanities and Social Sciences Communications*, 7 (1)
- Koolen-Bourke, D. and R. Peart (2022) *Science for Policy: the role of science in the National Policy Statement for Freshwater Management*, Auckland: Environmental Defence Society, https://eds.org.nz/wp-content/uploads/2022/08/Freshwater-Policy-Report_FINAL_CorrectedPostLaw-Suit.pdf
- Kukutai, T., T. McIntosh, A. Boulton, M. Durie, M. Foster, J. Hutchings, M. Mark-Shadbolt, H. Moewaka Barnes, T. Moko-Mead, S-J. Paine, S. Pitama and J. Ruru (2021) *Te Pūtahitanga: a Tiriti-led science-policy approach for Aotearoa New Zealand*, Ngā Pae o te Māramatanga, <https://www.maramatanga.co.nz/publication/te-putahitanga-tiriti-led-science-policy-approach-aotearoa-new-zealand>
- Lacey, J., M. Howden, C. Cvitanovic and R.M. Colvin (2018) 'Understanding and managing trust at the climate science–policy interface', *Nature Climate Change*, 8 (1), pp.22–8
- Leeming, J. (2018) 'How researchers are ensuring that their work has an impact', *Nature*, 556 (7699), pp.139–42
- Melchor, L. (2020) 'What is a science diplomat?', *Hague Journal of Diplomacy*, 15 (3), pp.409–23, doi: <https://doi.org/10.1163/1871191X-BJA10026>
- Ministry of Business, Innovation and Employment (2021) *Te Ara Paerangi Future Pathways Green Paper*, <https://www.mbie.govt.nz/dmsdocument/17637-future-pathways-green-paper>
- Ministry of Health (2021) 'Covid-19 Technical Advisory Group', <https://www.health.govt.nz/about-ministry/leadership-ministry/expert-groups/covid-19-technical-advisory-group>
- Morton, J. (2021) 'Covid 19 Delta outbreak: NZ tops world for trust in scientists', *New Zealand Herald*, 28 September, <https://www.nzherald.co.nz/nz/covid-19-delta-outbreak-nz-tops-world-for-trust-in-scientists-govt-study/NOXDBJG7VRIZBVJG422HUEN2SM/>
- OECD (2020) *How Can Governments Leverage Policy Evaluation to Improve Evidence Informed Policy Making?*, Paris: OECD, <https://www.oecd.org/gov/policy-evaluation-comparative-study-highlights.pdf>
- Oliver, K. and P. Cairney (2017) 'Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy?', *Health Research Policy and Systems*, 15 (1)
- Oliver, K. and P. Cairney (2019) 'The dos and don'ts of influencing policy: a systematic review of advice to academics', *Palgrave Communications*, 15 (1)
- Oliver, K., S. Innvar, T. Lorenc, J. Woodman and J. Thomas (2014) 'A systematic review of barriers to and facilitators of the use of evidence by policymakers', *BMC Health Services Research*, 14 (1)
- Pohl, C. (2008) 'From science to policy through transdisciplinary research', *Environmental Science and Policy*, 11 (1), pp.46–53
- Royal Society Te Apārangi (2022) 'Our expert advice under development', <https://www.royalsociety.org.nz/what-we-do/our-expert-advice/our-expert-advice-under-development>
- Sasse, T. and C. Haddon (2018) *How Government Can Work with Academia*, London: Institute for Government
- Te One, A. and C. Clifford (2021) 'Tino rangatiratanga and well-being: Maori self determination in the face of Covid-19' *Frontiers in Sociology*, 3
- UK Government (2022) 'Areas of interest', <https://www.gov.uk/government/collections/areas-of-research-interest>
- University of Bristol (2022) 'Influencing policy through world-class research', <http://www.bristol.ac.uk/policybristol/>
- Walker, L., L. Pike, C. Chambers, N. Lawrence, M. Wood and H. Durrant (2019) *Understanding and Navigating the Landscape of Evidence-based Policy: recommendations for improving academic–policy engagement*, Bath; Bristol: University of Bath Institute for Policy Research and PolicyBristol
- Welfare Expert Advisory Group (2019) 'About the WEAG', <http://weag.govt.nz/about-the-weag/>
- Williams, G.A., S.M.U. Díez, J. Figueras and S. Lessof (2020) 'Translating evidence into policy during the Covid-19 pandemic: bridging science and policy (and politics)', *Eurohealth*, 26 (2), pp.29–33