

**THE DEEP SOUTH**

Te Kōmata o  
Te Tonga

National  
**SCIENCE**  
Challenges

# **New Zealand's Climate Change Engagement Landscape**

**Results of a Survey by the  
Deep South Challenge Engagement Programme**

**In collaboration with  
Motu Economic and Public Policy Research**



**August 2017**

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## Executive summary

The Deep South Challenge (DSC) includes a significant Engagement Programme with the goal of helping New Zealanders to make decisions informed by climate science, and to inform DSC research. Designing an effective engagement strategy for the DSC requires a broad understanding of the current climate change engagement landscape in New Zealand and the identification of opportunities for partnership and collaboration. From 23 October to 6 November 2015,<sup>1</sup> the Engagement Programme collected information about current climate change engagement activity in New Zealand by distributing a voluntary survey to 372 people spanning 289 organisations representing government, research, business, NGO, education, culture and media. Recipients were encouraged to circulate the invitation further as appropriate. Responses were received from 125 people, some in their individual capacity rather than as organisational representatives. Of these, 111 had substantive content, and 50 allowed at least some level of public reporting of the information provided.

Survey questions addressed who is conducting current or planned climate change engagement activity, what audiences they are targeting, what activities and mechanisms they are using, what gaps they perceive in engagement activity and in the availability of information about climate change science, what priorities they would suggest for DSC research, and whether they would be interested in collaborating or partnering on DSC engagement. The survey also invited more detailed information about respondents' specific engagement activities. The survey achieved a broad and diverse, but not deep, sampling of sectoral interests with regard to climate change engagement. The most notable gaps in coverage by respondents include media, Māori/iwi and foundations/philanthropic organisations. Given the relatively small sample size and uneven coverage of the survey, the survey results should be treated as an informative indication and not a comprehensive or representative accounting of change engagement activity in New Zealand.

The survey found that a broad and diverse array of organisations and individuals serving different constituencies are currently conducting climate change engagement activities in New Zealand and overseas. They are using a range of engagement methods and tools. Climate change engagement activities more commonly address multiple aspects of climate change (e.g. physical science basis; impacts, adaptation and vulnerability; and mitigation) rather than a single aspect.

Climate change information needs more commonly identified by respondents included:

1. Regional-scale and sectoral analysis of climate change impacts and implications in New Zealand over different time horizons, with a "roadmap" for future research delivery
2. Climate change impacts on sea level rise, marine systems, coastal zones, weather systems, the water cycle and the agriculture sector
3. Integration of the science of climate change with the science of behaviour change.

Respondents recommended ways to make climate change engagement more effective by:

1. Making climate change information more accessible to the public
2. Increasing public receptiveness to climate change information
3. Improving public understanding of climate change information
4. Facilitating practical action on mitigation and adaptation.

These recommendations are presented in Figure 1.

Climate change engagement initiatives profiled by respondents included a range of activities: research and data collection; information sharing; education and experiential learning; training and certification; advocacy and community organising; public dialogue and consensus; and action on mitigation or adaptation. Many survey respondents expressed interest in working with the DSC in some capacity or suggested other potential collaborators for the DSC.

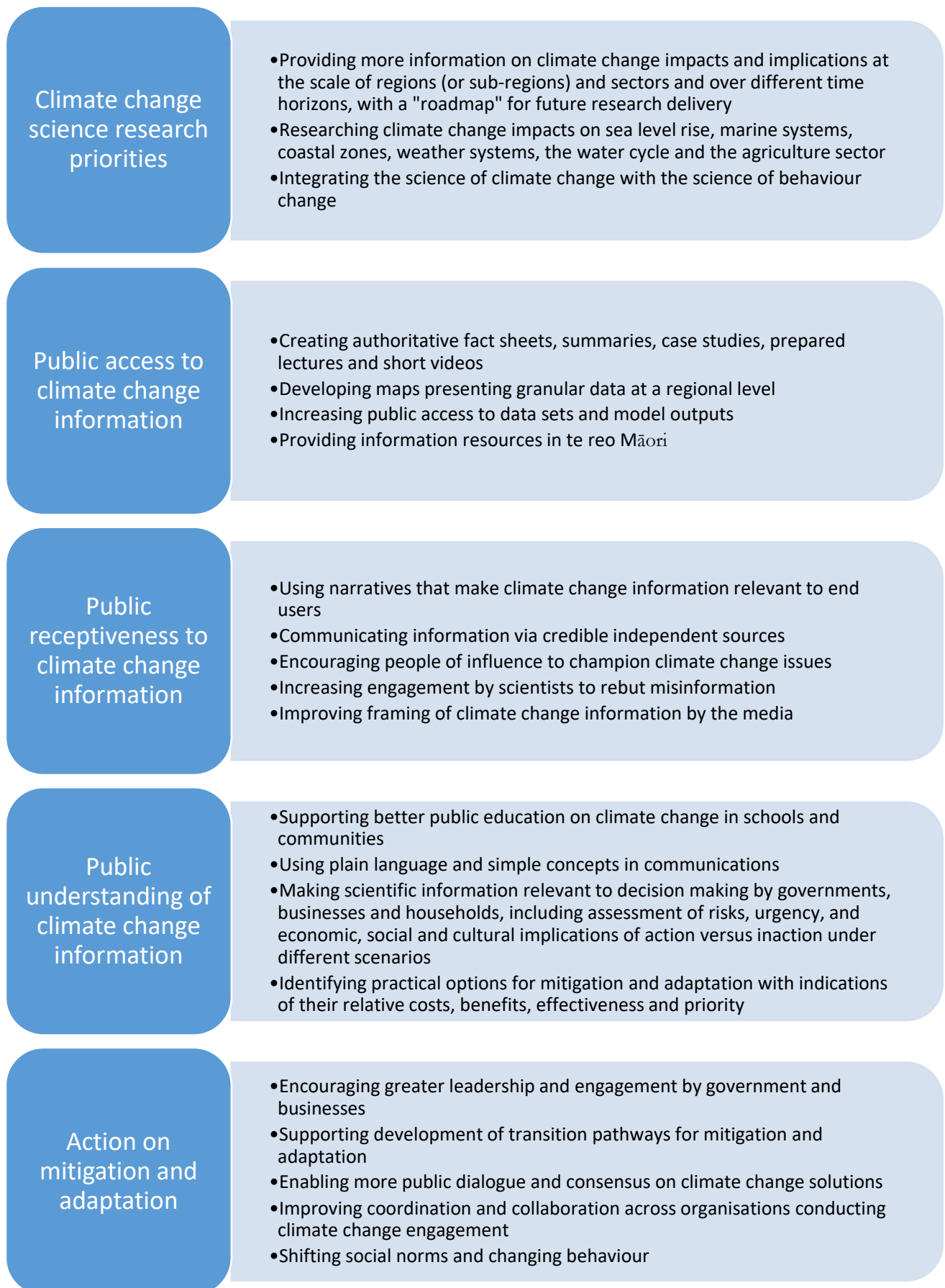
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<sup>1</sup> Note that two late responses were accepted through 17 November 2015.

These survey results could serve as a baseline for tracking changes in climate change engagement activity over time. Future iterations of this survey could attempt to fill gaps in coverage of sectoral interests and assess the impacts of engagement initiatives supported by the DSC Engagement Programme. Complementary research could focus on the target audiences for climate change engagement activities to assess the breadth of their exposure to climate change engagement activity, the depth of their involvement, the effectiveness and perceived credibility of different channels for obtaining information, and their level of understanding and practical application of climate change information.

This report documents the subset of survey findings for which public disclosure was permitted by the respondents. With only minor exceptions, the general trends discussed in this report reflect those associated with the full data set. Neither the partial nor the full data set constitutes a representative sampling of nationwide climate change engagement activity, and all of the findings are indicative rather than conclusive. In that context, those minor exceptions are not material to the use of this report to help inform the design of future climate change engagement activity in New Zealand.

FIGURE 1: SUMMARY OF SURVEY RECOMMENDATIONS ON CLIMATE CHANGE RESEARCH AND ENGAGEMENT



## Background

The mission of the Deep South (Te Kōmata o Te Tonga) National Science Challenge is to “enable New Zealanders to adapt, manage risk, and thrive in a changing climate.” The Deep South Challenge (DSC) includes a significant Engagement Programme, led by Dr Rhian Salmon, with the goal of helping New Zealanders to make decisions informed by climate science, and to inform Deep South Challenge research.

Researchers in the fields of psychology and social science have demonstrated that how people make decisions – individually and collectively – in relation to climate change is influenced not just by the *information* they receive, but also their *motivation* (influenced by their values, beliefs and social norms), their *skills* (their capability to understand the information and apply it to make decisions or take actions), and their *context* (having the tools and resources – such as policies, technologies, funding and time – required to respond) – all of which can broadly be considered their *capacity* to apply the information (for a review of models on environmental behaviour change, see Darnton 2008). Researchers have clearly disproved the “information deficit model,” under which it was assumed that people would automatically change their behaviour in response to receiving more or better information about climate change. Instead, people need to engage with information about climate change and with each other to determine what it means for them, what their options are and how they wish to respond (Moser and Dilling 2011). Researchers have also demonstrated that people can receive information about climate change through multiple channels, and that trusted intermediaries can influence whether people perceive the information as credible and relevant as well as their willingness to change behaviour in response (Nisbet and Kotcher 2009, Lewandowsky et al. 2012).

To support development of the DSC’s engagement strategy, the Engagement Programme distributed a voluntary survey to a wide array of New Zealand organisations and interest groups across sectors, including government, research, business, NGO, education, culture and media, to collect information about:

- What climate change engagement activities are already underway or planned in New Zealand; and
- How the DSC could support climate change engagement in New Zealand through strategic partnerships and funding for existing and new initiatives.

The survey opened on 23 October 2015 and closed on 6 November 2015.<sup>2</sup> Using both multiple-choice and open-ended questions, it collected information on the profile and activities of organisations in New Zealand involved in conducting engagement on climate change issues, and on suggestions for DSC engagement activity and research priorities. Undertaking the survey produced additional benefits by helping inform prospective stakeholders about the DSC and generating a list of contacts for future DSC engagement activity. This report describes the survey methodology and presents analysis of the findings for which respondents permitted public disclosure.

## Survey methodology

### Scope of the survey

For the purpose of the survey, the following definitions were applied to clarify the scope of climate change engagement:

- Climate change engagement seeks to involve people in activities that inform future planning and/or behaviour change in relation to climate change. Climate change engagement may involve stakeholders with a specific interest in such decisions (e.g. who have the potential to directly influence or be influenced by such decisions) and/or the general public.<sup>3</sup>

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<sup>2</sup> Note that two late responses were accepted through 17 November 2015.

<sup>3</sup> This definition was highly influenced by Gardner et al. (2009).

- Climate change engagement may address the physical science basis of climate change; climate change impacts, adaptation and vulnerability; and climate change mitigation, as distinguished by the *Fifth Assessment Report* by the Intergovernmental Panel on Climate Change.

The survey included twelve questions, one of which had four parts. Nine of the questions were mandatory: two requested the respondent's contact information and permission to disclose responses, and seven were multiple-choice questions on the type of organisation; climate change aspects, geographic areas and audiences targeted by engagement activities; types of engagement activities; and mechanisms for engagement. Three of the questions were voluntary: two were open-ended questions inviting brief profiles of engagement activities and input into priorities for Deep South research and engagement, and one invited identification of a contact for future DSC engagement. The participant information sheet and survey text are attached in Annex 1.

## Process for survey development

The survey content was developed by Catherine Leining, Policy Fellow at Motu Economic and Public Policy Research, and Dr Rhian Salmon, leader of the DSC Engagement Programme. Development was informed by a brief literature review on climate change-related and broader stakeholder engagement. The survey was designed in Qualtrics by Kate Bazeley with support from Jonathan Flutey, both at Victoria University of Wellington. The survey content was peer reviewed by the DSC's Science Leadership Team and Technical Advisory Committee on Engagement, and a small number of external stakeholders.

The survey recipient list was compiled by Salmon, Leining and Bazeley (the "survey team") drawing from professional contacts, the record of submissions during the government's consultation on its Intended Nationally Determined Contribution, a contact list shared by the New Zealand Climate Change Impacts and Implications programme, and an online review of organisations that might have an interest in climate change engagement. Contacts received an invitation to complete the survey on a voluntary basis in an email with a participant information sheet and a link to the online survey. Contacts were also invited to distribute the invitation across their networks.

The survey received ethical approval from Victoria University of Wellington (see Annex 2).

## Management of confidential information

Respondents were given the option to consent to public reporting of the information they provided in different forms as follows (see question 11 of the survey in Annex 1):

- In aggregated or anonymised form
- With or without acknowledgment that they completed the survey
- With or without permission for the information to be publicly reproduced, quoted or discussed with attribution to the respondent.

Unless participants consented to public reporting of the information they provided with attribution, or in an aggregated and/or anonymised form, all data obtained from participants will be kept confidential and not be made publicly available. All surveys will be concealed, and no one other than the primary investigator and approved assistant researchers will have access to them. Data collected online will be stored in the HIPPA-compliant, Qualtrics-secure database until it is deleted by the primary investigator. All written material will be kept in a locked file, and electronic information will be kept in a password-protected area, restricted only to the investigators. Primary data will be destroyed at the conclusion of the research.

## Number of survey recipients and respondents

The survey was distributed directly by the survey team to 372 contacts spanning 289 organisations. Table 1 presents the distribution of direct recipients using the researchers' system for organisational classification. Because recipients could extend the invitation to their networks, the invitation to participate is expected to have reached a broader audience.



TABLE 1: PROFILE OF DIRECT SURVEY RECIPIENTS

Organisation classification (survey team)	Number of organisations invited	Number of invitation emails sent
Art/culture	40	42
Business	47	56
Central government	24	35
Education	31	38
Foreign government	4	4
Philanthropic organisation	2	2
Local government	30	71
Māori /iwi	2	2
Media	20	20
Non-profit	51	54
Religious	8	8
Research/CRI	30	40
<b>TOTAL</b>	<b>289</b>	<b>372</b>

The survey team received 125 responses from individuals, of which 14 only included basic organisational information and were eliminated as too incomplete. The 111 remaining responses were considered during qualitative analysis of responses to open-ended questions; of these, 50 granted for permission for at least some level of public reporting of the information provided.

For the purpose of quantitative analysis of multiple-choice responses, the data set was refined down to 84 entries by selecting a single representative entry for each organisation or individual (when submitting in a personal capacity) on the basis of permissions<sup>4</sup> and content quality.<sup>5</sup> In three cases, information from multiple entries was merged to create a single representative entry. Of the 84 representative entries, 45 involved permission for at least some level of public reporting of the information provided.

When completing the survey, respondents were asked to classify their organisation. The organisational profile of respondents cannot be compared directly to that of invitees for the following reasons:

- Respondents may have applied a different classification to their organisation than the researchers.
- Respondents could select more than one option for classifying their organisation, whereas the researchers applied only one classification per organisation.
- In some cases, multiple people responded on behalf of the same organisation to cover different areas of activity.
- Some people responded in their personal capacity rather than (or in addition to) on behalf of their organisation.

Table 2 and Figure 2 below present the breakdown of survey respondents who approved public disclosure of their information. The survey achieved a broad and diverse, but not deep, sampling of sectoral interests with regard to climate change engagement. The most significant gaps in coverage by respondents include the media (for which only a small number responded and none permitted public disclosure of their information),

<sup>4</sup> Respondents who had authority to respond on behalf of their organisation and/or who permitted public reporting of the information they provided generally were selected in preference to those who lacked authorisation or requested no public reporting of their information.

<sup>5</sup> When entries had comparable levels of permissions, the entry with the highest coverage or quality of responses was given preference.

and Māori/iwi and foundations/philanthropic organisations (for which no responses were received). All of these groups would be considered key stakeholders in climate change engagement.

## Survey limitations

The survey was designed to collect information on the broad landscape of climate change engagement activity in New Zealand and identify opportunities for DSC to add value and provide support. The survey invited responses from organisations and individuals potentially involved in conducting climate change engagement activity, rather than those targeted by such activity. Although it is hard to measure the response rate precisely for the reasons detailed above, it was not high (111 substantive responses were received out of 372+ recipients). Those who responded substantively had some level of involvement in conducting engagement activity, whether past, current or planned.<sup>6</sup> This has three key implications:

- While the survey results are very useful for the design of DSC's Engagement Programme, they should be treated as an informative indication and not a comprehensive or representative accounting of change engagement activity in New Zealand.
- Survey respondents did not include organisations that are not conducting climate change engagement but would potentially have the capacity, interest or opportunity to do so in the future.
- By their own choice or understanding, survey respondents may not have reported engagement activities on issues that are highly relevant to climate change adaptation (e.g. land-use planning or natural hazards management) or mitigation (e.g. stationary energy or transport policy) but which they do not classify as "climate change engagement."

This report documents the subset of survey findings for which public disclosure was permitted by the respondents. With only minor exceptions, the general trends discussed in this report reflect those associated with the full data set. Neither the partial nor the full data set constitutes a representative sampling of nationwide climate change engagement activity, and all of the findings are indicative rather than conclusive. In that context, those minor exceptions are not material to the use of this report to help inform the design of future climate change engagement activity in New Zealand.

In their survey responses and, in some cases, direct communication with the survey team, respondents identified the following shortcomings in the survey design:

- It could require substantial effort for respondents from some large or complex organisations (e.g. central government, business associations) to cover the breadth of climate change engagement activity across divisions or regions. Therefore, some respondents only covered part of their organisation's activity.
- In some cases, the respondents' organisational processes for official approval of survey responses were cumbersome, politically sensitive, and, in some cases, prohibitive given the limited timeframe for the survey. Therefore, some respondents provided views in their personal capacity or as an unofficial submission. Some respondents did not give permission for their information to be released publicly in aggregated or anonymised form, or with attribution.
- Some respondents were confused about how to complete the survey in their personal capacity rather than as an organisational representative.
- In questions inviting qualitative responses, some respondents did not pick up on distinctions between different aspects of climate change (e.g. physical science; impacts, vulnerability and adaptation; and mitigation) or between engagement activity, research and policy/legislation. The information provided is still useful but may not directly address the question intended by the researchers.
- In some areas, the survey was better suited to organisations that are part of the "typical" climate change community rather than organisations such as arts and culture, education, etc., which sometimes found it difficult to fit their activities into the survey's framework.

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<sup>6</sup> The survey design inadvertently did not expressly permit respondents to complete the survey but report zero climate change engagement activity. At least one respondent reported past engagement activity but is not actively conducting such activity at present.

- The short timeframe for response was a barrier to some potential respondents.

Some respondents did not complete Question 11 addressing permissions regarding public release of their information. As a default, the survey team has assumed that permission for public release of the information was not granted by these respondents.

## Survey results

### Types of organisations involved in climate change engagement

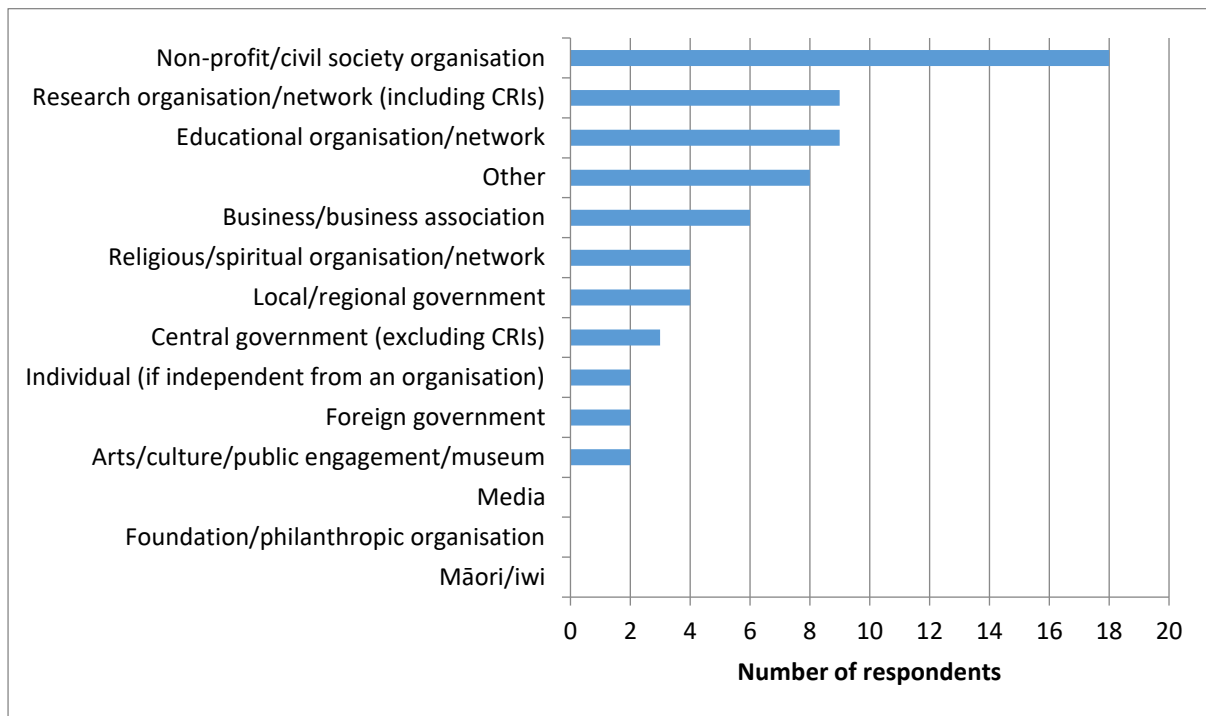
Table 2 and Figure 2 profile the types of organisations involved in climate change engagement according to the classification by respondents. These results are from 45 entries for which public disclosure was permitted; only one representative entry per organisation (or individual responding in a personal capacity) has been included. Note that respondents could select more than one type of organisation, and multiple respondents could belong to the same organisation.

Examples of “other” organisation types provided by respondents include: Crown Research Institute (CRI) subsidiary operating on a commercial basis, research funder (on behalf of central government), environmental education and services, independent group of engineers, recreation and tourism, independent non-profit statutory organisation, and sustainability advocate.

**TABLE 2: PROFILE OF SURVEY RESPONDENTS PERMITTING PUBLIC DISCLOSURE OF THEIR INFORMATION (ENTRIES: 45)**

Organisation classification (respondents)	Number of respondents	Percentage of respondents
<b>Non-profit/civil society organisation (excluding arts/culture/public engagement/museum, business and education)</b>	18	40%
<b>Educational organisation/network</b>	9	20%
<b>Research organisation/network (including CRIs)</b>	9	20%
<b>Other</b>	8	18%
<b>Business/business association</b>	6	13%
<b>Local/regional government</b>	4	9%
<b>Religious/spiritual organisation/network</b>	4	9%
<b>Central government (excluding CRIs)</b>	3	7%
<b>Arts/culture/public engagement/museum</b>	2	4%
<b>Foreign government</b>	2	4%
<b>Individual (if independent from an organisation)</b>	2	4%
<b>Media</b>	0	0%
<b>Foundation/philanthropic organisation</b>	0	0%
<b>Māori/iwi</b>	0	0%

**FIGURE 2: PROFILE OF SURVEY RESPONDENTS PERMITTING PUBLIC DISCLOSURE OF THEIR INFORMATION (ENTRIES: 45)**

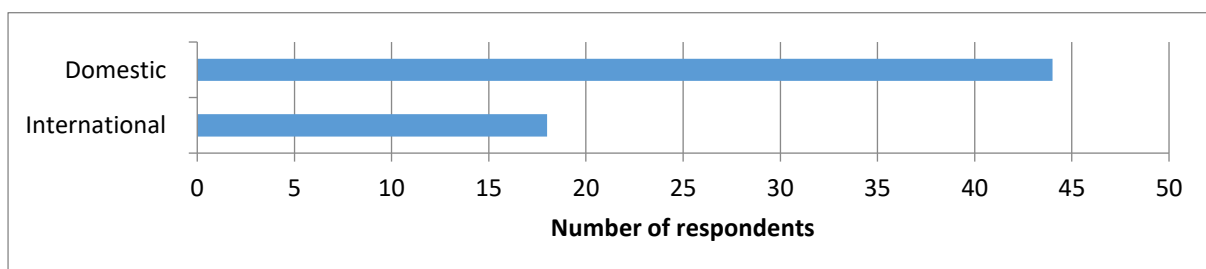


The survey results demonstrate the breadth of organisational involvement in climate change engagement in New Zealand. Non-profit (civil society), research and educational organisations appear to be the most prominent participants in such engagement, followed by businesses. However, a broad range of other organisation types and individuals also participate in climate change engagement. As noted above, no survey responses were received from organisations or individuals that classified themselves as foundations or philanthropic organisations or Māori/iwi; from the researchers’ personal knowledge, such organisations/individuals do conduct climate change engagement activities. The small number of media respondents did not permit public disclosure of their responses.

### Geographic scope of climate change engagement

Figure 3 profiles the geographic scope of climate change engagement. Most respondents engage with domestic audiences. Some have a nationwide focus. Others focus on a specific region or city and a range of areas is covered beyond the three main urban centres. A significant portion of respondents engages with international audiences. For different respondents, international audiences were identified at the level of countries (e.g. Australia, Canada, Chile, China, Indonesia, Japan, United Arab Emirates, United Kingdom, United States of America), regions (e.g. South Pacific, Latin America, Antarctica) or globally.

**FIGURE 3: GEOGRAPHIC FOCUS OF CLIMATE CHANGE ENGAGEMENT (ENTRIES: 45)**



## Aspects of climate change targeted by engagement

RESPONDENTS WERE ASKED TO SPECIFY WHICH ASPECTS OF CLIMATE CHANGE WERE ADDRESSED BY THEIR ENGAGEMENT ACTIVITY. THE DEFINITION CATEGORIES WERE DRAWN FROM THE IPCC'S *FIFTH ASSESSMENT REPORT*. THE RESULTS ARE PROVIDED IN TABLE 3 AND FIGURE 4. MANY RESPONDENTS REPORTED THAT THEIR ENGAGEMENT COVERED MORE THAN ONE ASPECT OF CLIMATE CHANGE, AS SHOWN IN

Table 4.

The “other” climate change aspects identified by respondents tended to be cross-cutting or disciplinary. Examples include: technology demonstration/implementation; providing solutions on mitigation or adaptation; catalysing active participation in solutions; fossil fuels; sustainable energy systems; awareness, engagement and education; monitoring, reporting and verification and carbon neutrality; domestic and international policy responses; lobbying central and local government; social framing and perceptions; leadership development; economics of climate mitigation and trading; advocacy for social justice/fairness; risk management and resilience; transition engineering; and domestic-scale relevance for actions.

TABLE 3: ASPECTS OF CLIMATE CHANGE TARGETED BY ENGAGEMENT (ENTRIES: 45)

Climate change aspect	Number of respondents	Percentage of respondents
<b>Impacts, adaptation &amp; vulnerability</b>	34	76%
<b>Mitigation</b>	32	71%
<b>Physical science basis</b>	19	42%
<b>Other</b>	17	38%

FIGURE 4: ASPECTS OF CLIMATE CHANGE TARGETED BY ENGAGEMENT (ENTRIES: 45)

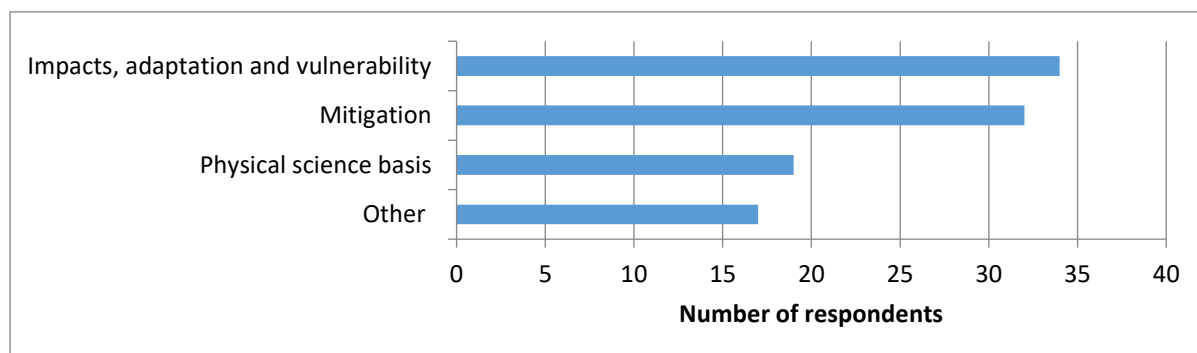


TABLE 4: COVERAGE OF MULTIPLE ASPECTS OF CLIMATE CHANGE (ENTRIES: 45)

	Physical science basis	Mitigation	Impacts, adaptation and vulnerability	Other
<b>Physical science basis</b>	19	11	18	4
<b>Mitigation</b>	11	32	23	13
<b>Impacts, adaptation and vulnerability</b>	18	23	34	13
<b>Other</b>	4	13	13	17

Table 5 and Figure 5 present more detail on areas of focus within the broader category of climate change impacts, adaptation and vulnerability. The “other” focus areas identified by respondents included: sea level rise; energy sources; household emissions (risk); impacts on services infrastructure; effects on Pacific islands;

psychological impacts; moral responsibility; viticulture; political unrest, democracy and international trade; and economic sectors through the divestment movement.

**TABLE 5: FOCUS AREAS FOR ENGAGEMENT ON CLIMATE CHANGE IMPACTS, ADAPTATION AND VULNERABILITY (ENTRIES: 35)**

Focus areas: Climate change impacts, adaptation and vulnerability	Number of respondents	Percentage of respondents
Urban areas	22	63%
Coastal systems and low-lying areas	22	63%
Rural areas	19	54%
Key economic sectors/services	18	51%
Terrestrial and freshwater ecosystems	17	49%
Food security and food production systems	17	49%
Freshwater resources	16	46%
Marine systems	14	40%
Human health	13	37%
Livelihoods and poverty	13	37%
Human security	10	29%
Other	10	29%

**FIGURE 5: FOCUS AREAS FOR ENGAGEMENT ON CLIMATE CHANGE IMPACTS, ADAPTATION AND VULNERABILITY (ENTRIES: 35)**

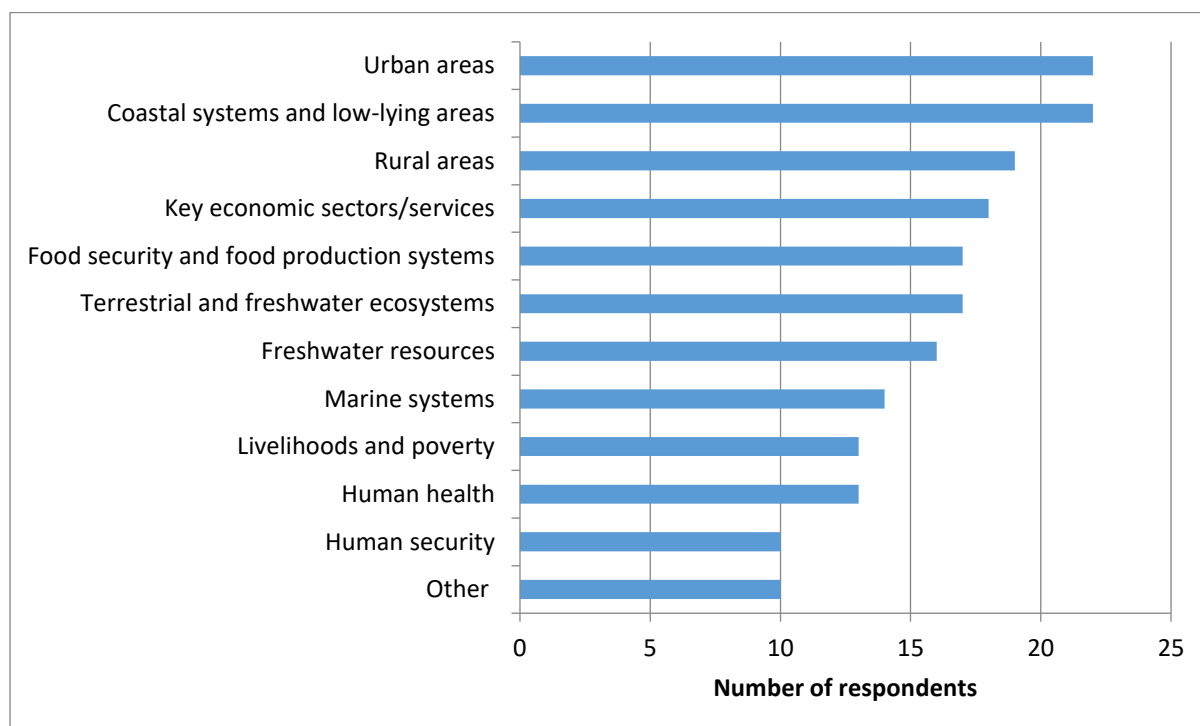
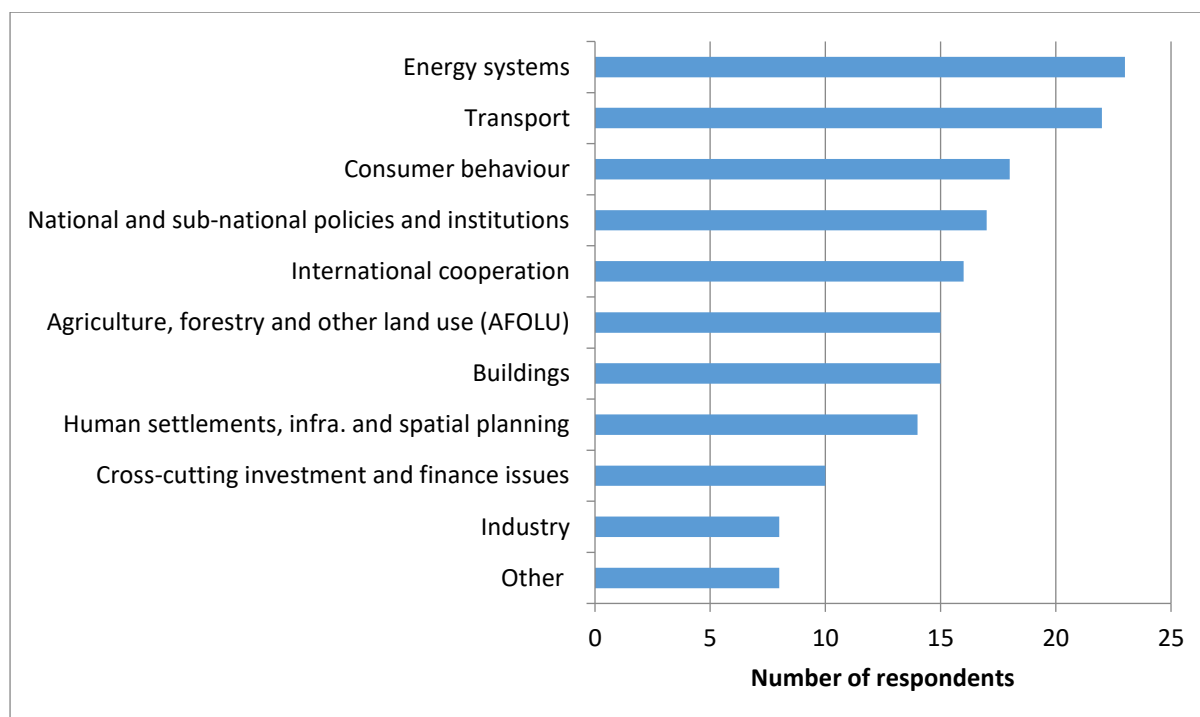


Table 6 and Figure 6 present more detail on areas of focus within the broader category of climate change mitigation. The “other” focus areas identified by respondents included: water systems; health, mental health and behaviour; waste avoidance, reuse and recycling; just transition/fairness; new business opportunities; transition engineering; political unrest, democracy and equity; value chain; waste; resource use, lifestyle choices and decision-making; issues related to the resources held by the organisation.

**TABLE 6: FOCUS AREAS FOR ENGAGEMENT ON CLIMATE CHANGE MITIGATION (ENTRIES: 32)**

Focus areas: Mitigation	Number of respondents	Percentage of respondents
<b>Energy systems</b>	23	72%
<b>Transport</b>	22	69%
<b>Consumer behaviour</b>	18	56%
<b>National and sub-national policies and institutions</b>	17	53%
<b>International cooperation</b>	16	50%
<b>Buildings</b>	15	47%
<b>Agriculture, forestry and other land use (AFOLU)</b>	15	47%
<b>Human settlements, infrastructure and spatial planning</b>	14	44%
<b>Cross-cutting investment and finance issues</b>	10	31%
<b>Industry</b>	8	25%
<b>Other</b>	8	25%

**FIGURE 6: FOCUS AREAS FOR ENGAGEMENT ON CLIMATE CHANGE MITIGATION (ENTRIES: 32)**



## Target audiences for climate change engagement

Table 7 and Figure 7 show that climate change engagement activity is targeted at a wide range of audiences. The most common focus areas include the general public, government (at all levels), media, students, researchers, educators, politicians and businesses. A middle grouping could include rural and urban residents and Māori/iwi. Relatively little engagement is targeting audiences such as low-income households, artists/performers, the elderly, healthcare providers, and ethnic groups other than Māori.

No respondents who selected “other ethnic groups” provided a further description. The “other” types of audiences identified by respondents included: faith communities/congregations; diplomatic corps; farming industry; farmers; Citizens Advice Bureaux; professional engineers; officials; professionals, especially chartered accountants; sustainable energy freaks; and schools, kura early childhood centres and their communities.

**TABLE 7: TARGET AUDIENCES FOR CLIMATE CHANGE ENGAGEMENT (ENTRIES: 45)**

Target audiences for engagement	Number of respondents	Percentage of respondents
<b>General public</b>	38	84%
<b>Government (local, regional or national)</b>	29	64%
<b>Media professionals</b>	23	51%
<b>Students</b>	22	49%
<b>Researchers</b>	21	47%
<b>Educators</b>	20	44%
<b>Politicians</b>	19	42%
<b>Businesses</b>	18	40%
<b>Rural residents</b>	16	36%
<b>Urban residents</b>	14	31%
<b>Other</b>	13	29%
<b>Māori/iwi</b>	8	18%
<b>Low-income households</b>	4	9%
<b>Artists/performers</b>	3	7%
<b>Elderly</b>	3	7%
<b>Healthcare providers</b>	2	4%
<b>Other ethnic groups</b>	2	4%



**FIGURE 7: TARGET AUDIENCES FOR CLIMATE CHANGE ENGAGEMENT (ENTRIES: 45)**

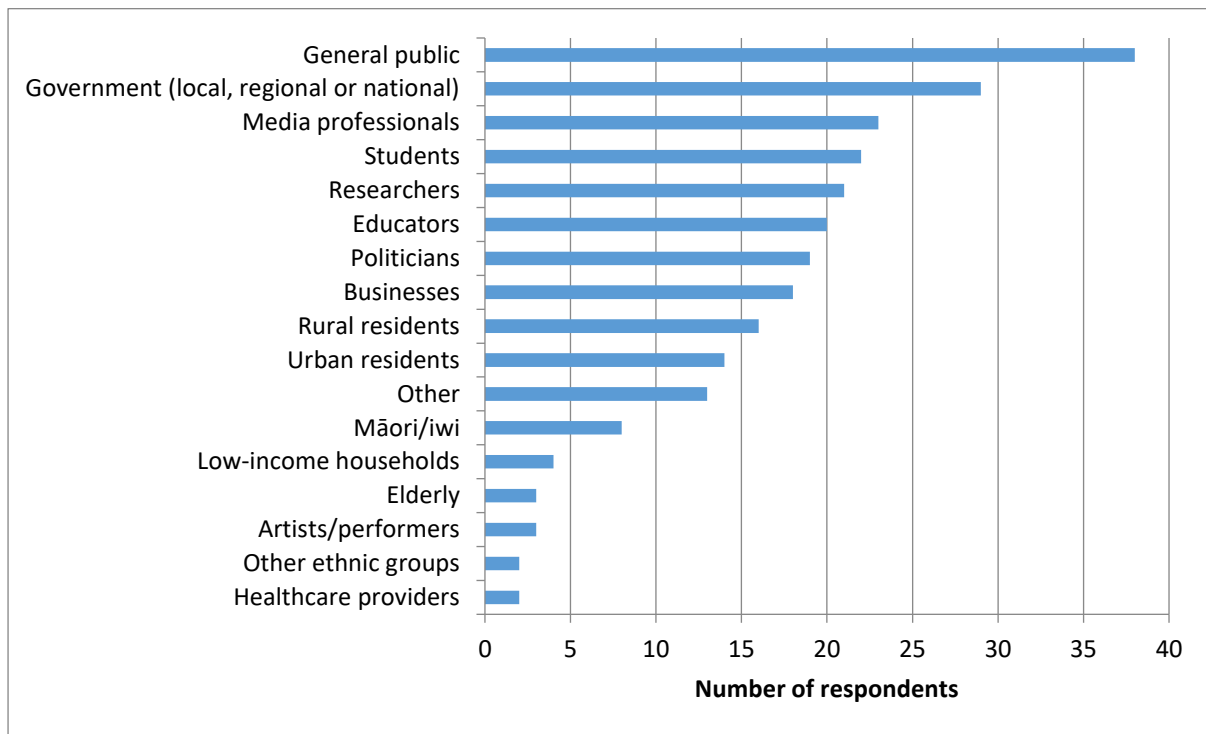
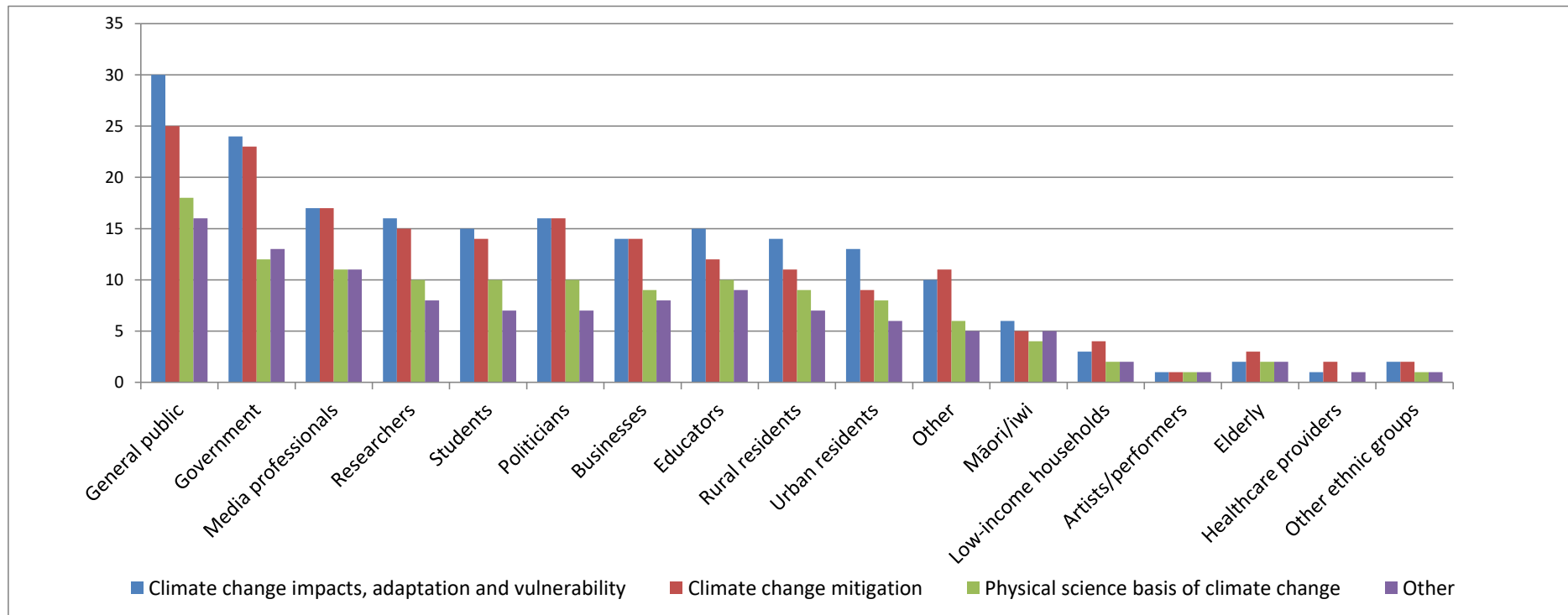


Table 8 and Figure 8 present results from cross-tabulating target audiences with climate change aspects addressed by engagement. They show that all target audiences are being engaged on all climate change aspects. Engagement on the physical science basis generally appears less prominent across target audiences than that on climate change impacts, adaptation and vulnerability and mitigation. While some audiences appear to receive slightly more engagement on impacts, adaptation and vulnerability compared to mitigation and vice versa, these results should not be considered conclusive given the small and uneven sampling of the study. This could be an interesting area for further investigation.

TABLE 8: RELATIONSHIP BETWEEN CLIMATE CHANGE ASPECTS AND TARGET AUDIENCES FOR ENGAGEMENT (ENTRIES: 45)

	Target aspect of climate change				Total
	Climate change impacts, adaptation and vulnerability	Climate change mitigation	Physical science basis of climate change	Other	
<b>General public</b>	30	25	18	16	38
<b>Government</b>	24	23	12	13	29
<b>Media professionals</b>	17	17	11	11	23
<b>Researchers</b>	16	15	10	8	21
<b>Students</b>	15	14	10	7	22
<b>Politicians</b>	16	16	10	7	19
<b>Businesses</b>	14	14	9	8	18
<b>Educators</b>	15	12	10	9	20
<b>Rural residents</b>	14	11	9	7	16
<b>Urban residents</b>	13	9	8	6	14
<b>Other</b>	10	11	6	5	13
<b>Māori/iwi</b>	6	5	4	5	8
<b>Low-income households</b>	3	4	2	2	4
<b>Artists/performers</b>	1	1	1	1	3
<b>Elderly</b>	2	3	2	2	3
<b>Healthcare providers</b>	1	2	0	1	2
<b>Other ethnic groups</b>	2	2	1	1	2
<b>Total</b>	34	32	19	17	45

**FIGURE 8: RELATIONSHIP BETWEEN CLIMATE CHANGE ASPECTS AND TARGET AUDIENCES FOR ENGAGEMENT (ENTRIES: 45)**



## Types of activities and mechanisms used for climate change engagement

The survey posed separate questions on the types of activities and the mechanisms (or means of conducting those activities) used for climate change engagement. The types of activities listed in the survey span the range identified in the IAP2 Spectrum of Public Participation according to the level of public impact on decision making: inform, consult, involve, collaborate and empower (see IAP2). The options were:

1. Information sharing
2. Information collection (e.g. research, surveys, citizen science)
3. Education (formal and informal)
4. Training
5. Consultation for decision making (e.g. consultation documents, opinion polls, focus groups/panels, public meetings)
6. Participation in decision making/problem solving (e.g. workshops, citizen advisory committees, dialogue, consensus building, participatory decision making)
7. Community mobilisation (e.g. advocacy, petitions, demonstrations, protests)
8. Provision of funding
9. Other (specify).

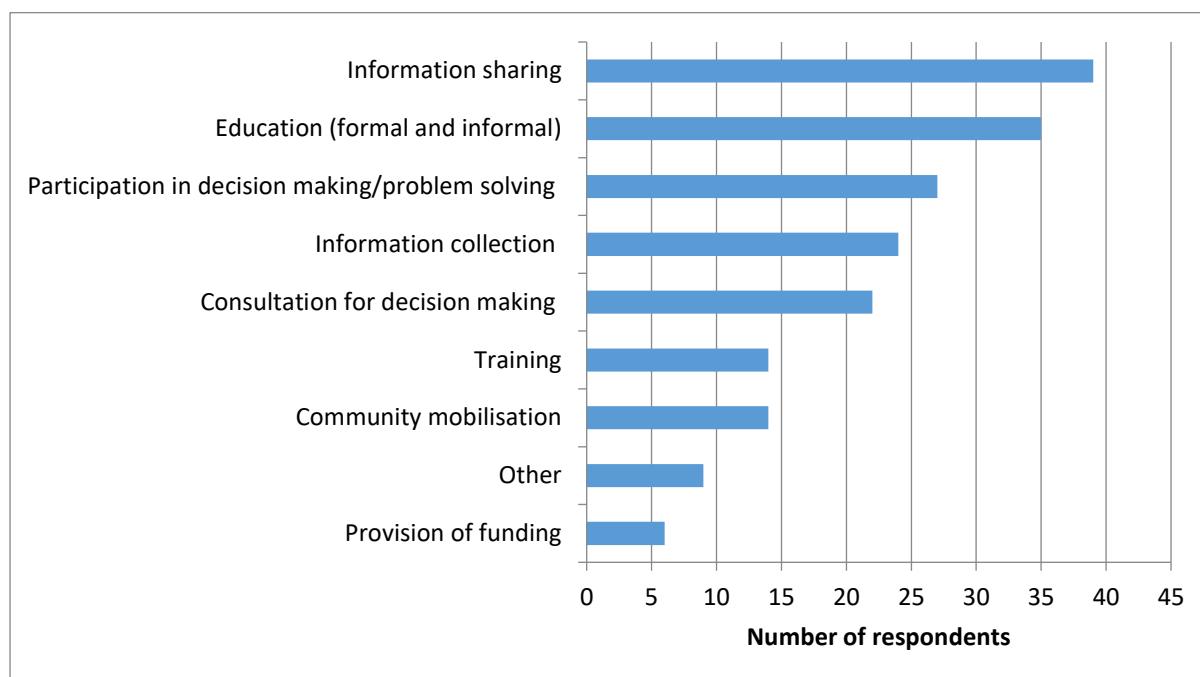
Table 9 and Figure 9 show that a broad range of activities are being used to engage New Zealanders on climate change issues. The strongest responses lay with information sharing and education. Participatory processes, information collection and consultation can be grouped into a middle category of use. Community mobilisation, training and provision of funding showed the lowest level of use.

The “other” types of engagement activities detailed by respondents included: outreach; demonstration projects; infrastructure projects; tools and resources for mitigation; certification of mitigation achievements and claims; conferences; advocacy; fact sheets; supporting public debates and lectures from international experts; engineering research; and publication of learning guides for community education tutors and study groups.

**TABLE 9: TYPES OF ACTIVITIES USED FOR CLIMATE CHANGE ENGAGEMENT (ENTRIES: 45)**

Types of activities used for engagement	Number of respondents	Percentage of respondents
<b>Information sharing</b>	39	87%
<b>Education (formal and informal)</b>	35	78%
<b>Participation in decision making/problem solving</b>	27	60%
<b>Information collection</b>	24	53%
<b>Consultation for decision making</b>	22	49%
<b>Community mobilisation</b>	14	31%
<b>Training</b>	14	31%
<b>Other</b>	9	20%
<b>Provision of funding</b>	6	13%

**FIGURE 9: TYPES OF ACTIVITIES USED FOR CLIMATE CHANGE ENGAGEMENT (ENTRIES: 45)**



The selection of climate change engagement mechanisms was informed by the typology developed by Rowe and Frewer (2005). The options in the survey were:

1. Classroom programmes
2. Cultural/community events
3. Exhibits
4. Literature/publications/newsletters/updates
5. Public lectures/conferences
6. Public meetings/ workshops
7. Personal communications by phone, mail or email
8. Protests/demonstrations
9. Traditional media (TV, radio, print)
10. Videos
11. Website/social media
12. Other (specify)

Table 10 and Figure 10 show that diverse mechanisms are being used to deliver climate change engagement activity. There is use of most mechanisms, with exhibits, videos and protests/demonstrations falling into the lowest-use category. It is interesting to note that significantly more respondents use websites and social media compared to traditional media (TV, radio and print).

The types of mechanisms identified as “other” include speaking at events, local enviroschools and international fora; field trips; citizen science programmes; interactives; smartphone apps; infrastructure projects; preparation of technical guidance, fact sheets, expert advice reports or submissions; international events; collaborative engagements with peers; project engagement with stakeholders (e.g. Councils, communities); learning groups; facilitated long-term whole-school programmes; and coalitions.

**TABLE 10: MECHANISMS USED FOR DELIVERING CLIMATE CHANGE ENGAGEMENT (ENTRIES: 45)**

Engagement mechanisms	Number of respondents	Percentage of respondents
Literature/publications/newsletters/updates	33	73%
Website/social media	29	64%
Public meetings/ workshops	27	60%
Public lectures/conferences	25	56%
Personal communications by phone, mail or email	23	51%
Traditional media (TV, radio, print)	17	38%
Cultural/community events	16	36%
Classroom programmes	14	31%
Other	12	27%
Exhibits	10	22%
Videos	9	20%
Protests/demonstrations	6	13%

**FIGURE 10: MECHANISMS USED FOR DELIVERING CLIMATE CHANGE ENGAGEMENT (ENTRIES: 45)**

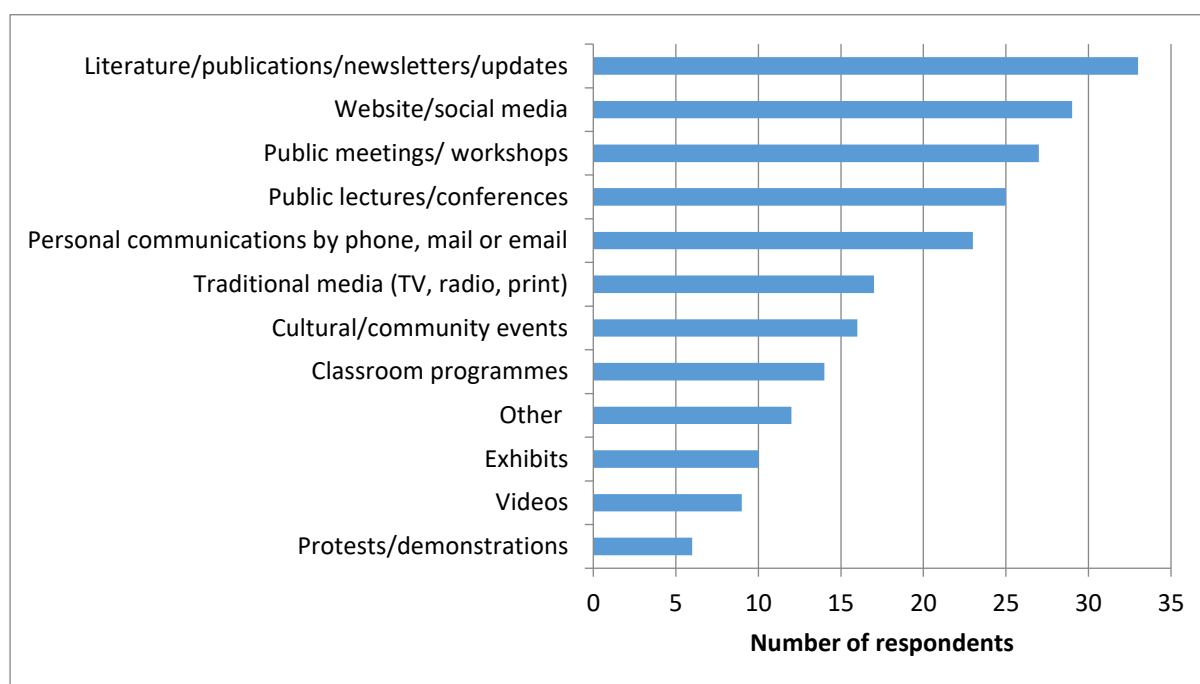
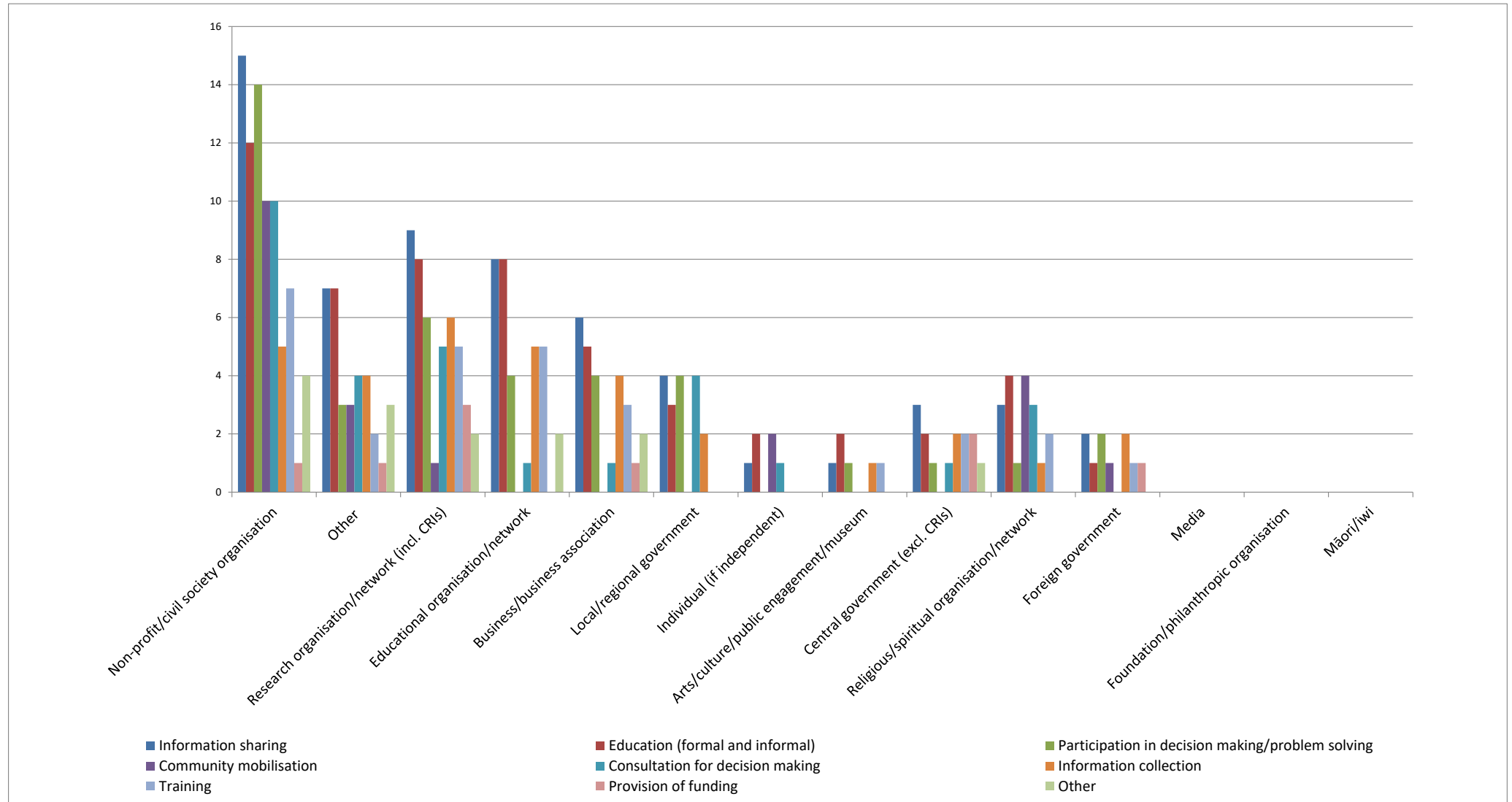


Table 11 and Figure 11 show the relationship between the types of organisations conducting engagement and the types of engagement activities that are used. Information sharing and education are the prominent engagement activities for most types of organisations. Community mobilisation appears to be the domain of non-profit or civil society organisations, with relatively significant use also by religious or spiritual organisations/networks. Funding is more the domain of central government and research organisations, with some participation by others.

TABLE 11: RELATIONSHIP BETWEEN ORGANISATIONS CONDUCTING ENGAGEMENT AND THE TYPES OF ACTIVITIES USED (ENTRIES: 45)

Type of organisation conducting engagement	Type of engagement activity									
	Information sharing	Education (formal and informal)	Participation in decision making/problem solving	Community mobilisation	Consultation for decision making	Information collection	Training	Provision of funding	Other	Total
Non-profit/civil society organisation	15	12	14	10	10	5	7	1	4	18
Other	7	7	3	3	4	4	2	1	3	8
Research organisation/network (incl. CRIs)	9	8	6	1	5	6	5	3	2	9
Educational organisation/network	8	8	4	0	1	5	5	0	2	9
Business/business association	6	5	4	0	1	4	3	1	2	6
Local/regional government	4	3	4	0	4	2	0	0	0	4
Individual (if independent)	1	2	0	2	1	0	0	0	0	2
Arts/culture/public engagement/museum	1	2	1	0	0	1	1	0	0	2
Central government (excl. CRIs)	3	2	1	0	1	2	2	2	1	3
Religious/spiritual organisation/network	3	4	1	4	3	1	2	0	0	4
Foreign government	2	1	2	1	0	2	1	1	0	2
Media	0	0	0	0	0	0	0	0	0	0
Foundation/philanthropic organisation	0	0	0	0	0	0	0	0	0	0
Māori/iwi	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>39</b>	<b>35</b>	<b>27</b>	<b>14</b>	<b>22</b>	<b>24</b>	<b>14</b>	<b>6</b>	<b>9</b>	<b>45</b>

FIGURE 11: RELATIONSHIP BETWEEN ORGANISATIONS CONDUCTING ENGAGEMENT AND THE TYPES OF ACTIVITIES USED (ENTRIES: 45)





## Current gaps in climate change engagement activity in New Zealand

Participants were invited in a voluntary open-ended question to identify current gaps in climate change engagement activity in New Zealand. Annex 3 presents a detailed breakdown of the responses received by category of response using a typology selected by the researchers. In cases where a response covered more than one category, it was divided or replicated where appropriate. The results are summarised in Table 12.

**TABLE 12: CURRENT GAPS IN CLIMATE CHANGE ENGAGEMENT ACTIVITY IN NEW ZEALAND**

Category of gap in engagement activity	Number of entries
<b>Government leadership /policy</b>	13
<b>Interpreting and applying information for decisions by end users</b>	6
<b>Improving the quality of information; filling information gaps</b>	6
<b>Improving the framing of information</b>	6
<b>Public knowledge/education</b>	4
<b>Role of the media</b>	4
<b>Targeting specific stakeholder groups</b>	3
<b>Making information more accessible</b>	3
<b>Who delivers engagement</b>	3
<b>Taking action</b>	2
<b>Changing social norms</b>	2
<b>Public dialogue/consensus</b>	1
<b>Improving coordination/collaboration</b>	1
<b>Business leadership/engagement</b>	1

## Additional information needed on climate change science to help with engagement

Participants were invited in a voluntary open-ended question to identify what additional information on climate change science would help their organisation to engage more effectively. Many respondents did not focus their responses on climate change science, but instead noted additional kinds of information that would be useful. Annex 4 presents a detailed breakdown of the responses received by category of response using a typology selected by the researchers. In cases where a response covered more than one category, it was divided or replicated where appropriate. The results are summarised in Table 13.

**TABLE 13: ADDITIONAL INFORMATION NEEDED TO HELP WITH ENGAGEMENT**

Category of information needed	Number of entries
<b>Better communication methods/tools</b>	7
<b>Climate change science/impacts/implications</b>	6
<b>No further information is needed</b>	5
<b>Better access to research data/tools/funding</b>	5
<b>Government policy/politics</b>	3
<b>Collaboration</b>	3
<b>Interpreting and applying information for decisions by end users</b>	2
<b>Mitigation options</b>	1
<b>Adaptation options</b>	1

## Potential collaboration or partnerships with the DSC

Participants were invited in a voluntary open-ended question to identify people, organisations or initiatives that might be interested in collaborating or partnering with the DSC on climate change engagement. The results are not presented in this report. A diverse range of respondents indicated that they would be interested in exploring opportunities, or suggested others who could be contacted. A particularly noteworthy

suggestion was to work with local-level organisations which could help to apply national information for community-level engagement.

## Research priorities for the DSC

Participants were invited in a voluntary open-ended question to identify what information needs, related to the science, impacts and implications of climate change for New Zealand, should be priorities for DSC research. Participants interpreted the question broadly. In cases where a response covered more than one category, it was divided or replicated where appropriate. The results are summarised in Table 14.

TABLE 14: RESEARCH PRIORITIES FOR THE DSC

Category of research priority	Number of entries
<b>Climate change science/ impacts/implications</b>	10
<b>Interpreting and applying information for decisions by end users</b>	7
<b>Mitigation options</b>	5
<b>Economic/business/trade implications</b>	5
<b>Engagement and behaviour change</b>	6
<b>Government policy/ politics</b>	4
<b>Adaptation options</b>	2
<b>New funding/disciplines</b>	3

## Profiles of climate change engagement initiatives

Participants were invited in a voluntary open-ended question to profile their climate change engagement initiatives. Information fields addressed their goals, main activities and outputs, time frames, organising partners/collaborators, direct participants, intended scope of influence, and website. The profiled initiatives covered a range of activities, including:

- Research and data collection
- Information sharing
- Education and experiential learning
- Training and certification
- Advocacy and community organising
- Public dialogue and consensus
- Action on mitigation or adaptation.

The target audiences for these initiatives varied widely. While some initiatives had a geographic focus (like a specific community, city or region), others focused on sectors (like business, agriculture or local government), societal subgroups (like youth or faith communities), or those engaging in specific disciplines (like education, behaviour change, or engineering).

## Areas for further research

These survey results could serve as a baseline for tracking changes in climate change engagement activity in New Zealand over time. Future iterations of this survey could attempt to fill gaps in coverage of sectoral interests and track the impacts of engagement initiatives supported by the DSC Engagement Programme. Complementary research could focus on the target audiences for climate change engagement activities to assess the breadth of their exposure to climate change engagement activity, the depth of their involvement, the effectiveness and perceived credibility of different channels for obtaining information, and their level of understanding and practical application of climate change information.

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Annex 1: New Zealand Climate Change Engagement Survey:  
Participant information sheet and survey text

# New Zealand Climate Change Engagement Survey

## Invitation and information sheet

We invite you to complete this short survey about the climate change engagement activities that your organisation conducts. We anticipate that completing the 12 questions will take 10 -15 minutes for most respondents. The deadline to complete your submission is **6th November 2015**. You may save your answers at any point and return at a later date to complete the survey.

This information is being collected by the [Deep South \(Te Kōmata o Te Tonga\) National Science Challenge](#), which has a mission to “transform the way New Zealanders adapt, manage risk, and thrive in a changing climate”. The Deep South Challenge is funded by the MBIE, hosted by NIWA, and delivered through research at Universities and CRIs across New Zealand<sup>7</sup>. The Engagement Programme is being led by Dr Rhian Salmon from Victoria University of Wellington.

The Deep South Challenge includes a significant public engagement programme with the goal of improving New Zealanders’ ability to make decisions that are informed by climate change science. We are currently seeking to establish:

- What climate change engagement activities are already underway or planned in New Zealand; and
- How the Deep South Challenge could support climate change engagement in New Zealand through strategic partnerships and funding for existing and new initiatives.

**All data obtained from participants will be kept confidential to the investigators unless permission is explicitly granted to make the data public.** The information collected will be used for programme planning by partners in the Deep South Challenge. A summary of the results will be made available (where consent has been granted) on the Deep South website, and in response to any direct requests from survey participants.

This questionnaire is being distributed to a wide array of organisations and interest groups across sectors, including government, research, business, NGO, education, culture and media. **Please feel welcome to share this survey with other relevant organisations.**

Thank you in advance for supporting the future of climate change engagement activity in New Zealand.

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<sup>7</sup> A full list of members of the Deep South Challenge Governance Board, Science Leadership Team and Kāhui Māori can be found at <http://www.deepsouthchallenge.co.nz/the-team>

## Background on the Deep South Challenge

The [National Science Challenges](#) were designed to fund research, science, technology, and related activities that have the potential to respond to the most important, national-scale issues and opportunities identified by science stakeholders and the New Zealand public. There are now eleven Challenges which are being implemented over the period of a decade.

Working with communities, government, and industry, the Deep South Challenge will bring together new research approaches to determine the impacts of a changing climate on our climate-sensitive economic sectors, infrastructure and natural resources to guide planning and policy.

The Deep South Challenge aims to significantly improve our ability to anticipate, respond to, and adapt to a changing climate. This will be achieved through a framework that connects society with science through five inter-linked programmes:

1. Engagement
2. Vision Mātauranga
3. Impacts and Implications
4. Earth System Modelling and Prediction
5. Processes and Observations.

These programmes will combine community engagement with an innovative climate prediction system, the New Zealand Earth System Model, all of which will be strengthened by new observations and enhanced knowledge of processes in Antarctica and the Southern Ocean.

## Defining the scope of climate change engagement

For the purpose of this questionnaire, we are using the following definitions to clarify the scope of climate change engagement:

- Climate change engagement seeks to involve people in activities that inform future planning and/or behaviour change in relation to climate change. Climate change engagement may involve stakeholders with a specific interest in such decisions (e.g. who have the potential to directly influence or be influenced by such decisions) and/or the general public.<sup>8</sup>

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<sup>8</sup> This definition draws upon concepts for stakeholder engagement from Gardner et al. (2009). See Gardner, J, Dowd, A-M., Mason, C. and Ashworth, P. (2009). *A framework for stakeholder engagement on climate adaptation*. CSIRO Climate Adaptation Flagship Working paper No.3. <http://www.csiro.au/resources/CAF-working-papers.html>.

- Climate change engagement may address the physical science basis of climate change; climate change impacts, adaptation and vulnerability; and climate change mitigation, as distinguished by the Fifth Assessment Report by the Intergovernmental Panel on Climate Change.

## Instructions

There are 12 questions in total for this survey, of which nine are mandatory (marked with an asterisk). Question 10 is optional and includes four parts. You may save your answers at any point and return at a later date to complete the survey. The deadline to complete your submission is 3rd November, 2015. Surveys that are partially completed on this date will be automatically submitted.

## Consent

**Confidentiality:** Unless participants consent to public reporting of the information they provide with attribution, or in an aggregated and/or anonymised form, all data obtained from participants will be kept confidential and not be made publicly available. All surveys will be concealed, and no-one other than the primary investigator and approved assistant researchers will have access to them. Data collected online will be stored in the HIPPA-compliant, Qualtrics-secure database until it is deleted by the primary investigator. All written material will be kept in a locked file, and electronic information will be kept in a password-protected area, restricted only to the investigators. Primary data will be destroyed at the conclusion of the research. This survey has received ethical approval from Victoria University of Wellington.

**Participation:** Participation in this research study is completely voluntary. You have the right to refuse to participate entirely.

By agreeing to participate in this research, you consent for the researcher to collect and analyse the data you provide for the purpose of programme planning for the Deep South Challenge. In question 11, you will be asked if you also consent for the researcher to publish and present data collected in this research, including to:

- Release aggregate information that includes this data to others (your information will be anonymous within this data set unless you give permission as noted above)
- Publicly report that your organisation completed the survey
- Publicly reproduce, quote or discuss your organisation's responses with attribution to your organisation

**Questions about the Research and your Rights as a Research Participant:** If you have questions regarding this study, or would like to be kept informed about the research, please contact: Dr Rhian Salmon, Deep South Challenge Science Lead (Engagement), email: [Rhian.Salmon@vuw.ac.nz](mailto:Rhian.Salmon@vuw.ac.nz); phone: (04) 463 5507.

**Human Ethics Committee information:** If you have any concerns about the ethical conduct of the research you may contact the Victoria University HEC Convener: Associate Professor Susan Corbett. Email [susan.corbett@vuw.ac.nz](mailto:susan.corbett@vuw.ac.nz) or telephone +64-4-463 5480.



# Text of the Deep South Challenge Climate Change Engagement Survey

Many thanks for agreeing to take this short survey about Climate Change engagement in New Zealand. This is being led by the Deep South National Science Challenge, as part of a body of work that will inform the Engagement programme. The results, where consent has been granted, will also be made publicly available on the [Deep South National Science Challenge website](#). Further information about this research can be found in an information sheet at <http://www.deepsouthchallenge.co.nz/engagementsurvey>.

The mission of the Deep South (Te Kōmata o Te Tonga) National Science Challenge is to “transform the way New Zealanders' adapt, manage risk, and thrive in a changing climate”. This includes a significant public engagement programme with the goal of improving New Zealanders' ability to make decisions that are informed by climate change science. We are currently seeking to establish:

- What climate change engagement activities are already underway or planned in New Zealand; and
- How the Deep South Challenge could support climate change engagement in New Zealand through strategic partnerships and funding for existing and new initiatives.

The information collected will be used for programme planning by partners in the Deep South Challenge. All data obtained from participants will be kept confidential to the investigators unless permission is explicitly granted (in Q11) to public reporting of the information they provide with attribution, or in an aggregated and anonymised form. This survey has been granted ethics approval from Victoria University of Wellington.

We anticipate that completing the 12 questions will take about 15 minutes for most respondents, depending on how many of the voluntary questions you choose to complete. Nine of these questions are mandatory (marked with an asterisk). You may save your answers at any point and return at a later date to complete the survey. The deadline to complete your submission is 6th November 2015. Surveys that are partially completed on this date will be automatically submitted.

**By proceeding with this survey, you consent to the conditions set out above and in the information sheet.**

Thank you in advance for supporting the future of climate change engagement activity in New Zealand.

**Before starting this survey, please consider whether you are answering questions on behalf of yourself, or officially on behalf of an organisation.**

**Questions marked with an asterisk are mandatory.**

1. \*Name of organisation or individual completing this survey.

If you are answering as an individual who has an institutional affiliation, please just give your name and list your institutional contact details below. If you are answering officially on behalf of an institution/ organisation, please list that here. (In Q.11, you will have the option to choose which, if any, information may be shared beyond the Deep South Challenge planning group and who should receive a copy of the preliminary report for review.)

2. Contact information (complete those fields that are relevant)

- Address (1)
- Website (2)
- Facebook site (3)
- Twitter handle (4)
- Number of staff (5)
- Number of members (if a membership organisation) (6)

Contact details of individual completing this survey on behalf of an organisation (optional)

- Name (1)
- Job description (2)
- Email address (3)

3. \*How would you classify your organisation? (Select all that apply)

- Arts/culture/public engagement/museum (1)
- Business/business association (2)
- Central government (excluding Crown Research Institutes) (3)
- Educational organisation/network (4)
- Foreign government (5)
- Foundation/philanthropic organisation (6)
- Local/regional government (7)
- Māori/iwi (8)
- Media (9)
- Non-profit/civil society organisation (excluding arts/culture/public engagement/museum, business and education) (10)
- Religious/spiritual organisation/network (11)
- Research organisation/network (including Crown Research Institutes) (12)
- Individual (if independent from an organisation) (13)
- Other (please specify) (14) \_\_\_\_\_

4. \*What geographic area does your organisation target through climate change engagement activity? (Select all that apply)

- Domestic (specify region(s), city(ies)) (1) \_\_\_\_\_
- International (specify country/countries) (2) \_\_\_\_\_

5. \*Which aspects of climate change does your organisation target through climate change engagement activity? (Select all that apply)

- Physical science basis of climate change (1)
- Climate change impacts, adaptation and vulnerability (4)
- Climate change mitigation (3)
- Other (please specify) (6) \_\_\_\_\_

If “Climate change impacts, adaptation and vulnerability” is selected:

Specify which aspects of climate change impacts, adaptation and vulnerability are addressed by your organisation (Select all that apply – optional)

- Freshwater Resources (1)
- Terrestrial and freshwater ecosystems (2)

- Coastal systems and low-lying areas (3)
- Marine systems (4)
- Food security and food production systems (5)
- Urban areas (6)
- Rural areas (7)
- Key economic sectors/services (8)
- Human health (9)
- Human security (10)
- Livelihoods and poverty (11)
- Other (specify) (12) \_\_\_\_\_

If “Climate change mitigation” is selected:

Specify which aspects of climate change mitigation are addressed by your organisation (Select all that apply – optional)

- Energy systems (1)
- Transport (2)
- Buildings (3)
- Industry (4)
- Agriculture, forestry and other land use (AFOLU) (5)
- Human settlements, infrastructure and spatial planning (6)
- International cooperation (7)
- National and sub-national policies and institutions (8)
- Cross-cutting investment and finance issues (9)
- Consumer behaviour (10)
- Other (specify) (11) \_\_\_\_\_

6. \*What types of people/organisations does your organisation target through climate change engagement activities? (Select all that apply)

- General public (1)
- Artists/performers (2)
- Businesses (3)
- Educators (4)
- Elderly (5)
- Government (local, regional or national) (6)
- Healthcare providers (7)
- Low-income households (8)
- Māori/iwi (9)
- Other ethnic groups (10) \_\_\_\_\_
- Media (11)
- Politicians (12)
- Researchers (13)
- Rural residents (14)
- Students (15)
- Urban residents (16)
- Other (specify) (17) \_\_\_\_\_

7. \*What types of activities does your organisation use for climate change engagement? (Select all that apply)

- Information sharing (1)
- Information collection (e.g. research, surveys, citizen science) (2)
- Education (formal and informal) (3)
- Training (4)
- Consultation for decision making (e.g. consultation documents, opinion polls, focus groups/panels, public meetings) (5)
- Participation in decision making/problem solving (e.g. workshops, citizen advisory committees, dialogue, consensus building, participatory decision making) (6)
- Community mobilisation (e.g. advocacy, petitions, demonstrations, protests) (7)
- Provision of funding (8)
- Other (specify) (9) \_\_\_\_\_

8. \*What mechanisms does your organisation use to deliver climate change engagement activities? (Select all that apply)

- Classroom programmes (1)
- Cultural/community events (2)
- Exhibits (3)
- Literature/publications/newsletters/updates (4)
- Public lectures/conferences (5)
- Public meetings/ workshops (6)
- Personal communications by phone, mail or email (7)
- Protests/demonstrations (8)
- Traditional media (TV, radio, print) (9)
- Videos (10)
- Website/social media (11)
- Other (specify) (12) \_\_\_\_\_

9. \*We invite you to provide more detailed information about your organisation's current and planned initiatives for climate change engagement. Do you have any climate change engagement initiatives you would like to profile briefly in this questionnaire?

- Yes
- No

(Repeat for each initiative)

Please enter details of your initiative number:

- Title (1)
- What are the goals? (2)
- What are the main activities and outputs? (3)
- What is the time frame for the activities? (4)
- Who are the organising partners/collaborators? (5)
- Who are the direct participants in the activities? (6)
- Whom else does your organisation intend to influence through the activities? (7)
- Website address for more information on the initiative (8)

Which climate change aspects are addressed?

- Physical science basis of climate change (1)
- Climate change impacts (2)
- Adaptation and vulnerability (3)
- Climate change mitigation (4)

10. We invite you to provide suggestions for the engagement programme of the Deep South Challenge. (Optional)

- What are the current gaps in climate change engagement activity in New Zealand? (1)
- What additional information on climate change science would help your organisation to engage more effectively? (2)
- Can you suggest people, organisations or initiatives that might be interested in collaborating or partnering with the Deep South Challenge on climate change engagement? Please include contact information where possible. (3)
- What information needs, related to the science, impacts and implications of climate change for New Zealand, should be priorities for Deep South Challenge research? (4)

11. If you indicate consent, your organisation's responses to this questionnaire may be published, presented or otherwise made public by the Deep South Challenge in anonymised and/or aggregated form, and/or cited or reproduced with attribution.

Prior to publication, the preliminary survey results will be shared with participating organisations to ensure consent and accuracy of information. Participant information will be included only where consent has been provided, and can be retracted at the time that the preliminary results are shared.

(a) \*Please indicate below who has authorised submission of the information in this survey

- I am authorised by virtue of my position to provide this information on behalf of the organisation/myself (for individuals)
- I have been authorised to provide this information on behalf of the organisation by: (please specify name and position)
- I do not have authority to formally submit this information on behalf of the named organisation. (This will direct you to the end of the survey and your responses will not be included in any report.)

(b) \*May the Deep South Challenge make public your organisation's questionnaire responses in anonymised or aggregated form?

- Yes, but I DO NOT give permission for the Deep South Challenge to report publicly that my organisation completed the survey (1)
- Yes, and I also give permission for the Deep South Challenge to report publicly that my organisation completed the survey (2)
- No (3)

(c) \*May the Deep South Challenge publicly reproduce, quote or discuss your organisation's questionnaire responses with attribution to your organisation?

- Yes (1)
- No (2)

(d) \*Email address for the authorising individual who will receive the preliminary report \_\_\_\_\_

Additional recipient contact details:

- Contact 1:
- Contact 2:
- Contact 3:

12. If your organisation is willing to be contacted in future by the Deep South Challenge in relation to Engagement about climate change, whom should we contact?

- Name (1)
- Position/ Role (2)
- Phone number (3)
- Email address (4)

Thank you for taking time to complete this survey. Please submit your responses by clicking the NEXT [>>] button below.

If at any time you wish to withdraw this information from the survey project, please contact [rhian.salmon@vuw.ac.nz](mailto:rhian.salmon@vuw.ac.nz).

## Annex 2: Ethics approval by Victoria University of Wellington



Phone 0-4-463 5480

Email [susan.corbett@vuw.ac.nz](mailto:susan.corbett@vuw.ac.nz)

### MEMORANDUM

TO	Rhian Salmon
COPY TO	Kate Bazeley
FROM	AProf Susan Corbett, Convener, Human Ethics Committee
DATE	16 October 2015
PAGES	1
SUBJECT	<b>Ethics Approval: 22369</b> Deep South National Science Challenge - New Zealand Climate Change Engagement Survey

Thank you for your application for ethical approval, which has now been considered by the Standing Committee of the Human Ethics Committee.

Your application has been approved from the above date and this approval continues until 16 October 2018. If your data collection is not completed by this date you should apply to the Human Ethics Committee for an extension to this approval.

Best wishes with the research.

Kind regards



Susan Corbett

Convener, Victoria University Human Ethics Committee

## Annex 3: Responses on current gaps in climate change engagement activity

**Question 10(1): We invite you to provide suggestions for the engagement programme of the Deep South Challenge. What are the current gaps in climate change engagement activity in New Zealand?**

**Index of response categories (# of responses with permission for public disclosure):**

1. Improving the quality of information; filling information gaps (6)
2. Improving the framing of information (6)
3. Interpreting and applying information for decisions by end users (6)
4. Making information more accessible (3)
5. Targeting specific stakeholder groups (3)
6. Government leadership /policy (13)
7. Business leadership/engagement (1)
8. Role of the media (4)
9. Who delivers engagement (3)
10. Public knowledge/education (4)
11. Public dialogue/consensus (1)
12. Taking action (2)
13. Improving coordination/collaboration (1)
14. Changing social norms (2)

*Note: In cases where a response covered more than one category, it was divided where appropriate or replicated if meaning would otherwise be lost. Some entries have had light copy-editing to correct typos and improve readability.*

Category	#	Comment	Capacity <sup>9</sup>
1. Improving the quality of information; filling information gaps	1	Supply chain drivers. Consumer awareness and commitment to make low carbon choices. Consistent methodologies for product footprinting. Consistent methodologies for reporting soil carbon in inventories for landowners and products produced on that land. Consistent methodologies for reporting the emissions associated with compositing and other biogenic emissions sources. More attention paid to understanding and measuring/managing carbon sinks - not just forestry.	O
	2	Evidential basis for climate change.	O
	3	Process-based studies that address the problem of developing adaptation strategies for primary industries and the general community, based on realistic assessment of regional- and local-scale variations in climate.	O
	4	Local-scale understanding of climate change risks and risk management.	O
	5	Integration of social/behavioural sciences and physical/natural sciences.	O

<sup>9</sup> O = organisational capacity; I = individual capacity



Category	#	Comment	Capacity <sup>9</sup>
	6	There is a deep lack of understanding about the relative impact of different types of climate action.	I
2. Improving the framing of information	1	Overcoming public apathy with regard to climate change in terms of constantly being "bombarded with doom and gloom scenarios". It needs to be communicated more clearly that there are also opportunities associated with responses to climate change.	0
	2	There is no real sense of urgency and too much short-term thinking.	0
	3	We also find that the psychology of climate change is as important as presenting the information - what are the key drivers that will motivate people to change their actual lifestyles?	0
	4	Having stories / examples that are meaningful for most NZers that is at arm's length from the 'is it' vs 'isn't it' happening debate or pros/cons of ETS that dominates the media.	0
	5	Lack of sense of urgency.	0
	6	Media involvement is minor and continues to treat climate change as an optional belief system instead of as a reality.	0/I
3. Interpreting and applying information for decisions by end users	1	Working more deeply with end-users to determine their level of understanding and informational needs.	0
	2	Insufficient tuning of climate change information to specific economic sectors or sociogeographic groups at regional or subregional scales that is able to help such groups identify and understand the stakes potentially to be held by them in climate change issues.	0
	3	Implications for NZers of changes that are inevitable or potential. Ability to influence outcomes.	0
	4	What are the actual and real costs of climate change inaction for households in NZ?	0
	5	Much current publicity focusses on the "cost" of climate change often without obvious reference to the comparator. Public need to be better informed about co-benefits of mitigation options and the skewed risk profile of doing something versus nothing. A more informed public that is clearer about what it wants is more likely to elicit government response.	0
	6	Links between latest research and community, grassroots education and action.	0
4. Making information more accessible	1	Resources in te reo Maori.	0
	2	Proactive high-level summaries of climate change knowledge (as e.g. the Australian Climate Council does).	0
	3	Access to knowledge about proactive mitigation and adaptation practices which can be used in everyday life. Now often seen as too hard, too big, too remote an issue.	0
5. Targeting specific stakeholder groups	1	The major gap is engagement with the public and small businesses.	0
	2	Our research indicates young females 18-24 years of age; and teachers and children as online resources are limited and engagement is low across a wide audience.	0
	3	We have identified that young people and older people seem to be on board with climate change issues. There seems to be an engagement gap in the centre age ranges.	0
6. Government leadership/policy	1	A clear and comprehensive set of policy targets and actions.	0
	2	The DSNSC is still not running, not transparent and too much admin is involved and is sending stupid surveys around. That is not useful at all.	0
	3	Very limited level of engagement of the current government which has gained an international reputation for avoidance of the significant issues; things have gone backward.	0
	4	A sceptical government is the biggest gap.	0

Category	#	Comment	Capacity <sup>9</sup>
	5	Lack of commitment by central government to meaningful ETS or carbon tax, without which climate change response is seen as a 'maybe try later' issue. Meanwhile the taxpayer subsidises the most polluting industries, which also gives wrong message. Individuals feel disempowered whilst government fails to act.	0
	6	Being able to engage with our decision-makers effectively for the required outcomes.	0
	7	The biggest gap is leadership from the central government, who gutted the ETS yet clings to that as its only avenue of confronting climate change. We're heartened to hear about the review of the ETS, but personally I think it should be scrapped in favour of a carbon tax.	1
	8	Engagement with the issues by government.	0
	9	Mandatory legislation to phase out obvious behaviours that impact climate change: / - fossil fuel use for power generation / - dependence on fossil fuels for transport / - plastic production / - organics in the waste stream.	0
	10	More initiatives and stronger action from NZ government.	0
	11	NZ is now the highest per capita emitter of GH gases and government policy acts to encourage this. For instance the debate now going on to discourage the take up of solar PV and prevent it from growing to 40% of total generation to only 5% in order to protect the profits of power companies.	0
	12	A serious lack of leadership from government and a lack of understanding of the value addressing/ leading on CC can have for NZ.	0
	13	Lack of clear leadership on the issue from a central govt level.	0
7. Business leadership/ engagement	1	A lack of profiled leadership from corporate leaders.	0
8. Role of the media	1	There is considerable information going into the public domain. The public need help to synthesise and understand this by credible non-self-interested parties. This needs to include effective social media engagement as well as traditional written reporting.	0
	2	Having stories / examples that are meaningful for most NZers that is at arm's length from the 'is it' vs 'isn't it' happening debate or pros/cons of ETS that dominates the media.	0
	3	More public education on issue e.g. in news media.	0
	4	Media involvement is minor and continues to treat climate change as an optional belief system instead of as a reality.	0/1
9. Who delivers engagement	1	None of it is grassroots led.	0
	2	There is considerable information going into the public domain. The public need help to synthesise and understand this by credible non-self-interested parties.	0
	3	Non-advocacy engagement in climate policy (lack of think tanks).	0
10. Public knowledge/ education	1	The biggest gap is lack of knowledge.	0
	2	Public understanding.	1
	3	Very little being done to educate schools and communities. I recently asked a group of primary schools teachers from around NZ if they knew what ocean acidification was and they all said no. Similarly when we asked a group of year 10 students from Riverton the same question they all said no.	0
	4	More public education on issue e.g. in news media.	0
11. Public dialogue/ consensus	1	Lack of engagement and potential consensus amongst key stakeholders.	0
12. Taking action	1	Getting beyond the science, which is actually good enough at this point, and getting on to change projects.	0

Category	#	Comment	Capacity <sup>9</sup>
	2	There are many options for greenhouse gas reduction that have not been picked up in NZ. Lacking from current activity is quantitative assessment of options such as reduced vehicle fuel consumption (from the current 9.9L/100 km in the car fleet), reduced electricity emissions, impact of overseas travel etc etc.	O
13. Improving coordination/ collaboration	1	One key priority for us is to improve linkages across various organisations as we have found that working together produces a better result than going it alone. Also we are conscious of the need to not double up so that efficiency of work is maximised.	O
14. Changing social norms	1	There is still a broad rural segment that denies the threat of climate change. Vested interest in agriculture hinders meaningful action.	I
	2	There is a taboo on discussing climate change in general social discourse.	O/I

## Annex 4: Responses on additional information needed to help with engagement

**Question 10(2): We invite you to provide suggestions for the engagement programme of the Deep South Challenge. What additional information on climate change science would help your organisation to engage more effectively?**

**Index of response categories (# of responses with permission for public disclosure):**

1. Climate change science/impacts/implications (6)
2. Adaptation options (1)
3. Mitigation options (1)
4. Interpreting and applying information for decisions by end users (2)
5. Better communication methods/tools (7)
6. Better access to research data/tools/funding (5)
7. Government policy/politics (3)
8. Collaboration (3)
9. No further information is needed (5)

*Note: In cases where a response covered more than one category, it was divided where appropriate or replicated if meaning would otherwise be lost. Some entries have had light copy-editing to correct typos and improve readability.*

Category	#	Comment	Capacity <sup>10</sup>
1. Climate change science/impacts/implications	1	Clear, comprehensible and authoritative science re marine impacts and trends.	O
	2	Estimates of regional rainfall under various climate change scenarios.	O
	3	Tough one. The science is clear and robust and only becoming more so. I don't there is an issue with a lack of science. It's a lack of meaningful narrative around the science. That said, we very much need the science to be adequately supported so there is a growing and maturing substance backing those narratives.	I
	4	Impacts of hard coastal protection on marine ecosystems.	O
	5	Information on key gaps (e.g., info missing from NZ for IPCC docs) that research can be directed at.	O
	6	Regional-scale impacts analysis.	O
2. Adaptation options	1	The information we have from e.g. NIWA on likely climate change impacts on each region and what local govt and residents can do to adapt, e.g. power and water conservation, food security (how our horticulture can adapt), better transport options etc.	O
3. Mitigation options	1	What are the specific priorities for individual New Zealanders to act and influence climate equity for future generations? For instance, for churches, overseas action groups often promote solar electricity to mitigate against the use of oil burners to heat churches. As NZ already has 80% renewable electricity generation and is aiming at 90% this advice is not relevant for our type of buildings and electricity supply make up. Ie. Specific advice for New Zealanders within our context.	O
	1	None. What's needed is the translation of the complex information that we do have.	O

<sup>10</sup> O = organisational capacity; I = individual capacity

Category	#	Comment	Capacity <sup>10</sup>
4. Interpreting and applying information for decisions by end users	2	The question implies that information on the science is all that is valuable, and that is not so. Information that is needed is that which extends the science information into messages about social, economic and cultural implications and potential decisions for economic sectors or sociogeographic groups.	O
5. Better communication methods/tools	1	Hands-on activities and resources that help illustrate the process and impacts of climate change on the marine environment and marine species to primary and secondary students and the wider community.	O
	2	Having prepared lectures that are up to date and accurate. We could then teach this material - using YouTube, social media and PowerPoint mediums as it is hard getting time to develop these resources and even when you do, we are not all singing from the same song sheet.	O
	3	Tough one. The science is clear and robust and only becoming more so. I don't there is an issue with a lack of science. It's a lack of meaningful narrative around the science.	I
	4	Simple clear and crisp messaging. The challenge is the inconsistency of information in the public domain and many differing views.	O
	5	Information about the links between people's everyday lives and climate change - e.g. the impact that different choices have on climate change – in English and te reo Maori.	O
	6	Clear examples or case studies of CC impact, data, etc. that would be meaningful to share with public. This needs images and an accessible 'back story' of the science involved - what it told us or how it enabled responsiveness.	O
	7	Presentation of information in plain English and in terms of simple concepts. Pitching at a secondary school project level is good for understanding in the wider community. The climate sceptic campaign of deliberate misinformation has presented a huge barrier to understanding of basic realities that still needs to be overcome.	O/I
6. Better access to research data/tools/funding	1	We don't need any more information, we just need resources to do the work.	O
	2	A single international database for product footprinting.	O
	3	The science is well and truly accessible at a high level. A highly granular nationwide map of climate change risks that is accessible to all New Zealanders free of charge.	O
	4	Free access to climate data from the maximum number of sites around New Zealand at high-resolution time scales (hourly), as well as access to high-resolution model output. For example, free access to the VCSN data (NIWA) would be useful.	O
	5	Research funding focused on adaptation & mitigation.	O
7. Government policy/politics	1	It's not information we need - there's heaps of that - there could always be more and better of course. That of itself is not going to convince the politicians - it is a mindset - need to change hearts and minds. Perhaps they should all be required to have formal education and attain a specified level of knowledge about climate change, governance, equity, ethics and other matters before being able to put themselves forward as list or electoral candidates. That way they would have displayed at least some competence - just like those in various trades, professions/occupations.	O
	2	Council having the initiative to say that climate change is fact. People on council who are climate change deniers can have loud voices.	I
	3	Government procurement (buying solutions) / investing in sustainable options.	O
8. Collaboration	1	There's plenty available currently, but working with experts and exploring the frontiers of the science is a potential area of collaboration.	O
	2	Information about collaboration opportunities with multidisciplinary teams.	O
	3	I'm after a quantitative solution based forum that could feed govt policy.	O
	1	None. We have all the information we need.	O

Category	#	Comment	Capacity <sup>10</sup>
9. No further information is needed	2	None. What's needed is the translation of the complex information that we do have.	0
	3	It's not information we need - there's heaps of that - there could always be more and better of course. That said, we very much need the science to be adequately supported so there is a growing and maturing substance backing those narratives.	0
	4	Do not need any more information. If basic dynamics tells you that you are going into a curve too fast, because your speed is twice as fast as the value on the sign... Then you don't need to know more about the friction of tires on a road, or how impact with a tree or going over a cliff causes damage to a car... in order to know that the reasonable action is to put your foot on the brake.	0
	5	None.	0