



Canada, Climate Change and Education: Opportunities for Public and Formal Education

National Survey of over 3,196 Canadians Executive Summary

A project of



Lakehead
UNIVERSITY



Learning for a
Sustainable Future

LSF

With support from

SSHRC  CRSH

Leger
Metrics

About The Survey

The purpose of this national survey is to gain an understanding of Canadians' current levels of knowledge and perceptions of climate change and its risks, assess Canadians' views on how the education system should respond to climate change, and provide a snapshot of climate change education practice in Canada.

Total respondents:

3,196

Languages:

English • French

Target Audiences:

General Public in Canada

Parents of K-12 students

Youth in grades 7-12

Educators of grade K-12

“Why should I be studying for a future that soon will be no more, when no one is doing anything whatsoever to save that future?”

And what is the point of learning facts within the school system when the most important facts given by the finest science of that same school system clearly mean nothing to our politicians and our society?

- Greta Thunberg, 2018

Why The Survey

Moving Canada toward resilience and adaptability for climate impacts today and in the future will require support and action at all levels of Canadian society.

This study establishes Canada-wide baseline data reflecting audiences' knowledge and understanding of climate change, their perspectives on the importance of climate change and its risks, and views on the role of schools and climate change education. Data are presented both nationally and from provincial/regional jurisdictions. This report is focused on the Atlantic region.

The national data study also provides insights into climate change education practice from an open-sample (OS) of teachers and a closed-sample (CS), which is representative. These results are significant in providing an unprecedented snapshot of teacher practice in Canada.



Methodology

This survey tool was developed in May 2018 by Dr. Ellen Field, Lakehead University, with Learning for a Sustainable Future and Leger Research Intelligence.

The survey was conducted online through Leger, who operate one of Canada's largest online survey panels of approximate 400,000 Canadians. In total, 2,191 responses were collected through Leger's survey panel (closed sample - CS) from the general public, parents, students, educators, and district leaders/school administrators. This included 111 Educators (K-12 teachers and district leaders). The CS sample is representative of the Canadian public.

In order to reach a significant number (1,000+) of educators, the survey was also distributed via Learning for a Sustainable Future through an Open Sample (OS) which was publicly available. While OS responses were received from all audiences, only the K-12 teachers and district leaders (1,120) were included in this report. Since the OS data is not subject to the same controls as the Leger panel survey (CS), the OS results for educators are presented separately from the CS results in this study.

See Methodology section in National Survey Report for full description.



Survey insights: Perspectives of Canadians*

- **Canadians are concerned about climate change**

79% of Canadians are concerned about the impacts of climate change and 78% believe there are risks to people in Canada.

- **Canadians are certain that climate change is happening**

85% of Canadians are certain that climate change is happening.

- **Canadians are less sure about the human impacts**

In response to a question early in the survey 46% of Canadians indicated that they think climate change is caused mostly by human activity. Further into the survey when asked if they think human beings are responsible for climate change 73% agreed.

- **Canadians are less certain that carbon dioxide and other GHGs cause climate change**

48% of Canadians correctly attributed carbon dioxide and other GHGs as the primary causes of climate change.

*Canadians = average of closed-sample respondents (students, parents, teachers, public)

Survey insights: Knowledge, Understanding and Information

- **43% of Canadians failed the climate change knowledge test**
43% of Canadians answered 4 or fewer of the 10 knowledge questions correctly
- **Significant gap between perception and awareness**
While half (51%) of Canadians feel they are well-informed about climate change, only 14% correctly answered 8 - 10 of the knowledge questions. 86% agree they need more information on climate change.
- **Canadians get climate change information predominantly from television news**
When asked which sources of climate change information Canadians trust the most, 72% of Canadians said scientists/academics; however Canadians get climate change information from television news (54%), documentaries (48%), and conversations with friends and family (47%).

*Canadians = average of closed-sample respondents
(students, parents, teachers, public)



Survey insights: Impacts and Action

- **Canadians are already seeing the impacts of climate change**

While only 36% of Canadians reported that they have personally experienced the effects of climate change, a majority feel that climate change is causing or making the following worse: droughts (72%), hurricanes (69%), wildfires (76%), coastline erosion (75%), river flooding (73%), and severe winters (70%).

- **Two thirds of Canadians are taking action to reduce climate change**

$\frac{2}{3}$ of Canadians have reported taking actions to reduce their personal contribution to greenhouse gas emissions.

- **There is doubt that technology will solve climate change**

Only 30% of Canadians agree that new technologies will solve the problem without individuals having to make big change.

- **Systemic change is needed**

57% of Canadians believe their actions have an impact on climate change while 79% agree that, while personal actions are important, systemic change is needed to address climate change.

*Canadians = average of closed-sample respondents
(students, parents, teachers, public)



Survey insights: Role of Education

- **Canadians and educators agree that more should be done to educate young people about climate**

65% of Canadians, 76% of closed-sample educators and 82% of open-sample educators think the education system should be doing more to educate young people about climate change

- **Limited class time spent on climate change content**

Only $\frac{1}{3}$ of closed-sample educators and 59% of open sample educators reported teaching any climate change. For teachers who do integrate climate change content, most students experience 1 - 10 hours of instruction per year or semester.

***Canadians = average of closed-sample respondents (students, parents, teachers, public)**



Survey insights: Role of Education Cont'd

- **Teachers need support**

Only 32% of closed-sample educators feel they have the knowledge and skills to teach about climate change. Educators say they need professional development, classroom resources, current information on climate science, curriculum policy, information on the economics and politics of climate change, and national/provincial climate data.

- **All teachers should be teaching about climate change**

Climate change content is predominantly taught in science and social studies, when it is covered. 75% of closed-sample teachers and 81% of open-sample teachers believe that climate change education is the role of all teachers.

*Canadians = average of closed-sample respondents
(students, parents, teachers, public)



Survey insights: Students

- **Students are a key group to target with climate change education and action**

46% of students ages 12-18 are categorized as “aware,” meaning they understand that human-caused climate change is happening, but they do not believe that human efforts will be effective.

Survey insights: Regional Responses

- **AB & SK frequently diverge from the rest of Canada**

In general, levels of certainty that climate change is happening, overall knowledge of climate change, concern about impacts, acknowledgement of risks, and support for a greater focus on climate change education are lowest in AB and SK.



Formal Education Recommendations

- Ministries of Education should release policy statements guiding climate change education
- Ministries of Education should revise curricula to embed core climate change expectations across subjects, with a focus on multiple dimensions of climate change including scientific and environmental, social, cultural, and economic; climate impacts and risk; mitigation and adaptation strategies; and dimensions of justice and ethics
- Ministries of Education should develop a consultation mechanism for youth to participate in curriculum development and review processes for climate change content
- Faculties of Education should ensure teacher-candidates' courses address best practices of climate change education



Formal Education Recommendations Cont'd

- School boards and teachers' unions should provide professional development to enhance teacher knowledge, tools and strategies for teaching about climate change, thereby increasing teachers' confidence and ability to engage students.

Provide instructional strategies for handling different points of view on aspects of climate change and inquiry processes for fostering critical thinking and evidence-based dialogue.

Provide resources to help students understand citizen movements and the process of systemic change.

Provide teachers with current national/provincial climate data and classroom resources including lesson plans, videos and books to ensure students are learning up-to-date, locally-relevant information.

- To address apathy and eco-anxiety, school boards, schools and teachers should ensure student learning is authentic and relevant to local climate impacts, utilizing strategies including inquiry, experiential learning, opportunities for deliberative dialogue, and community partnerships for local climate action.
- School boards should provide information on emerging and already established green sector career pathways for teachers and guidance counsellors.

Public Education Recommendations

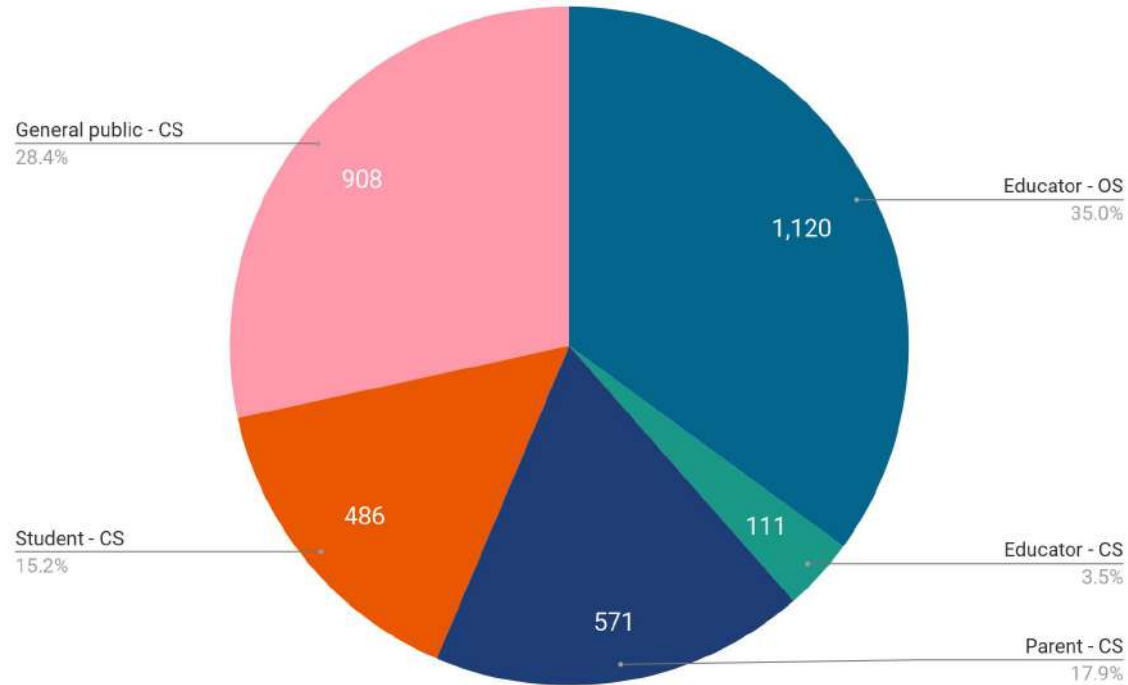
- Informal education should provide Canadians with more information about climate change from trusted sources including scientists and academics, utilizing television and radio news programming, online news, documentaries and movies
- Informal education should address predominant misconceptions about climate change and improve public understanding of its primary causes, enabling citizens to understand the need for responses to climate change, such as greenhouse gas reduction policies, and the urgency of this need
- Informal education should provide Canadians with information resources on high impact personal climate actions that they can integrate into their daily lives



Public Education Recommendations Cont'd

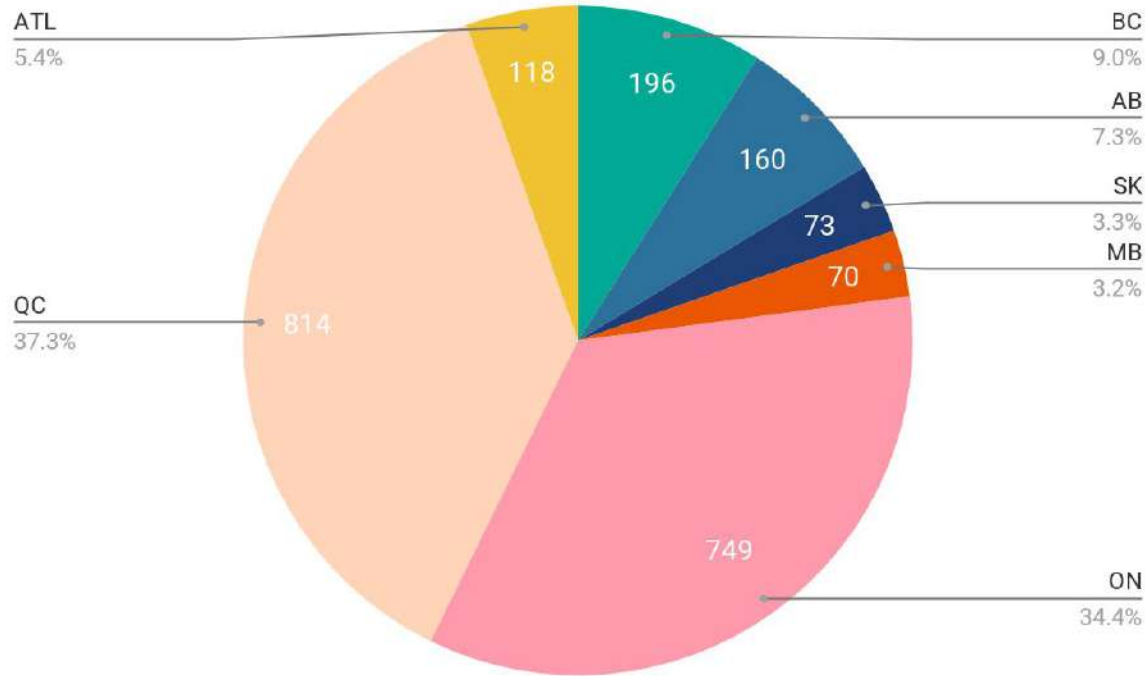
- Informal education agencies should provide a guide book and resources to help parents and grandparents to know how to talk to children and young people about climate change. This resource should draw upon current environmental psychology research.
- Informal education should share case studies of how stakeholders can work together to address climate change locally and nationally, focusing on collective processes that lead to systemic changes

Total Respondents - National



$n=3196$ (Educator OS = 1120, Educator CS = 111, Parent CS= 571, Student CS= 486, Other CS= 908)

Total Respondents - Provincial/Regional



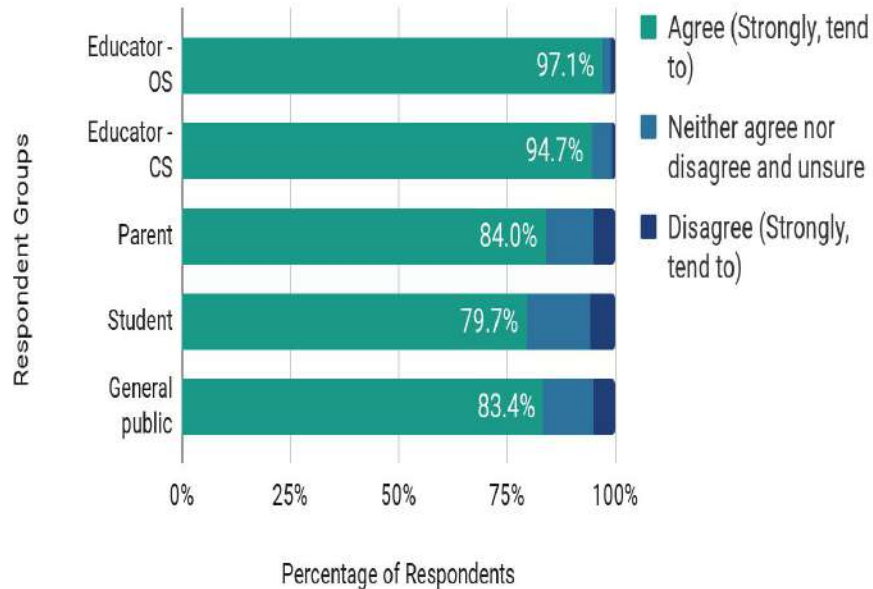
$n=2180$ (BC=196, AB=160, SK=73, MB=70, ON=749, QC=814, ATL=118)



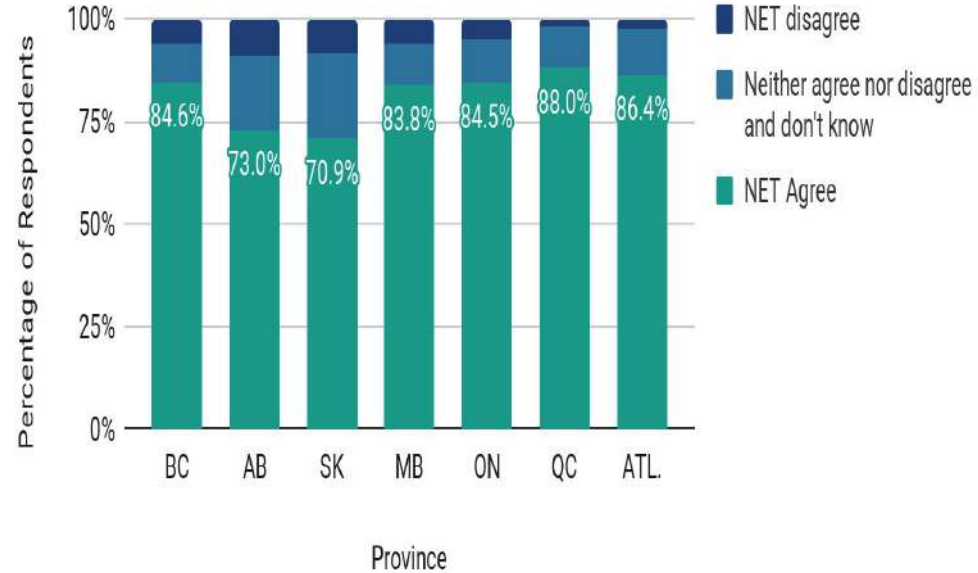
Perceptions

I am certain that climate change is really happening

National Results

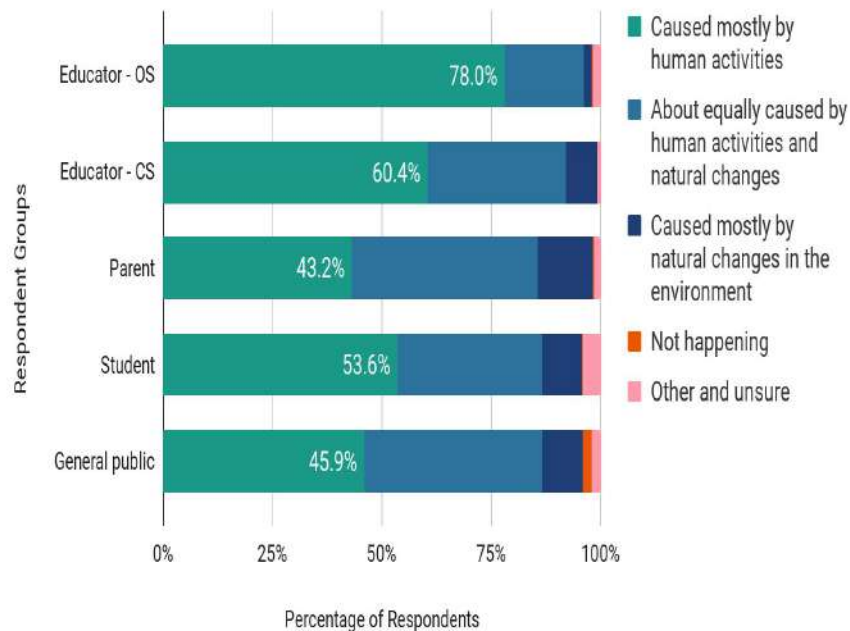


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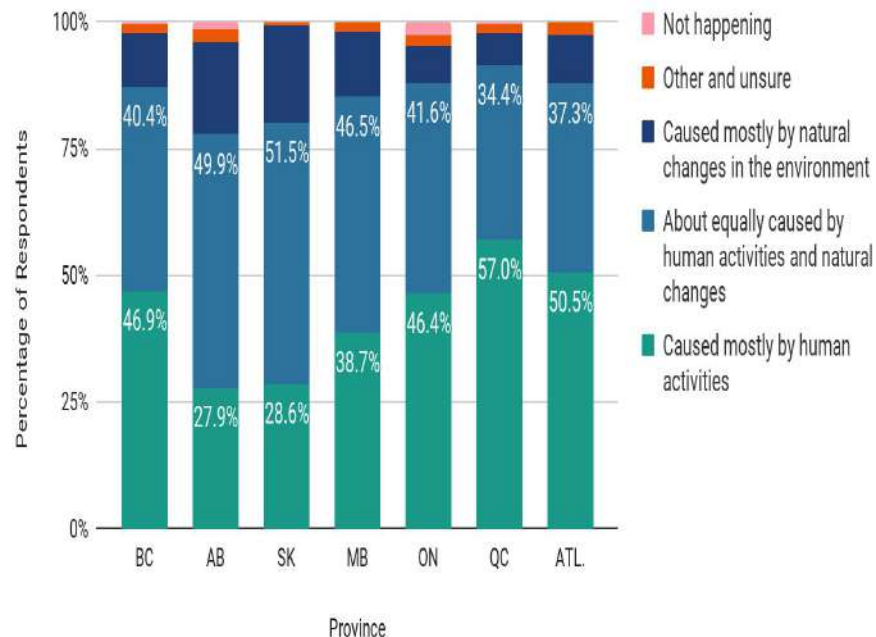


Do you think climate change is...

National Results

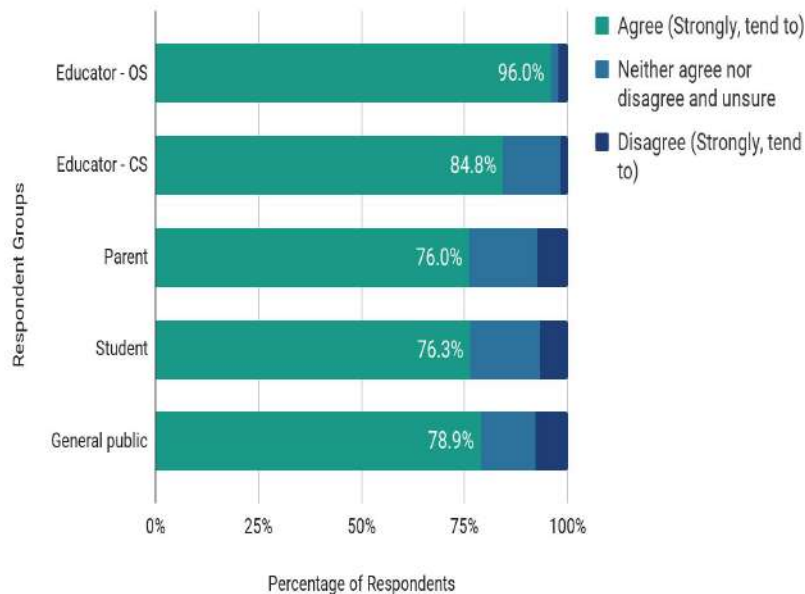


Provincial Results

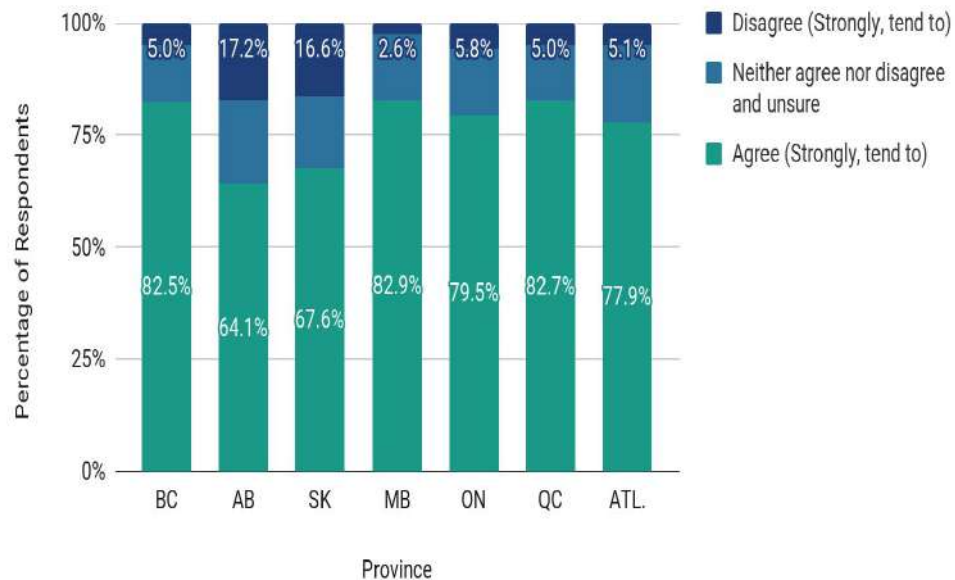


I am concerned about the impacts of climate change

National Results

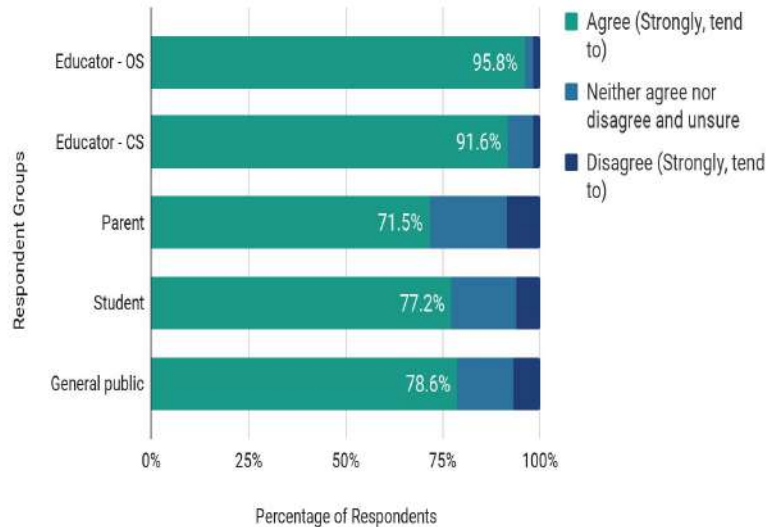


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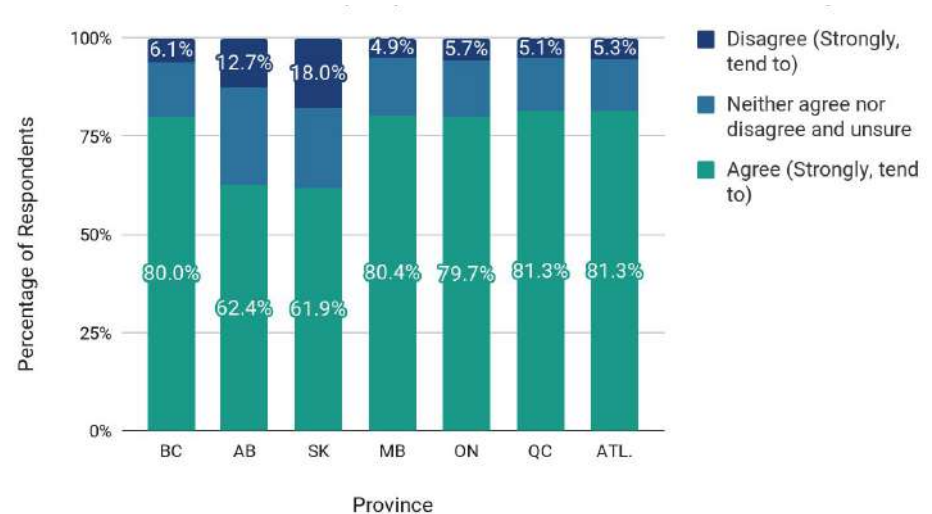


There are risks to people in Canada from climate change.

National Results



Provincial Results





Knowledge, Understanding & Information

List of 10 Climate Knowledge Questions and Answers

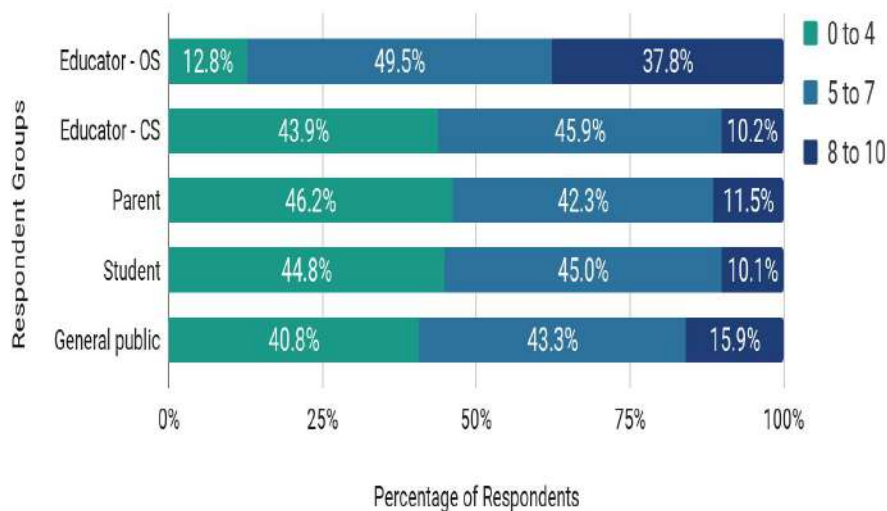
1. Do you think climate change is...	Caused mostly by human activities Caused mostly by natural changes in the environment About equally caused by both human activities and natural changes Not happening Other (please specify) Unsure
2. Which comes closest to your own view?	Most climate scientists think climate change is happening Most climate scientists do not think climate change is happening There is a lot of disagreement among climate scientists about whether Climate change is happening or not Don't know enough to say
3. To the best of your knowledge, climate change is mostly caused by...	Carbon dioxide and other greenhouse gases Emissions from nuclear power plants Thinning of the ozone layer Particulate air pollution Industrial chemicals Natural variability Climate change is not happening Unsure

<p>4. To the best of your knowledge, the main process behind climate change is...</p>	<p>An increase in gasses in the Earth's atmosphere that trap heat Letting more of the sun's heat into the Earth's atmosphere through a thinner ozone layer An increase in solar activity Particle pollution in the air reflecting heat back to Earth Climate change is not happening Unsure</p>
<p>5. To the best of your knowledge, Canada's average temperature has ... since 1948.</p>	<p>Increased by 1 – 1.5 degrees Celsius Increased by 0.5 – 0.99 degrees Celsius Increased by 0 – 0.49 degrees Celsius Decreased by 1 – 1.5 degrees Celsius Decreased by 0.5-0.99 degrees Celsius Decreased by 0-0.49 degrees Celsius Stayed the same Unsure</p>
<p>6. To the best of your knowledge, in Canada (between 1990 – 2015), what sector was the largest greenhouse gas emitter?</p>	<p>Oil and gas Transportation Agriculture Heavy industry Electricity Buildings Waste Unsure</p>

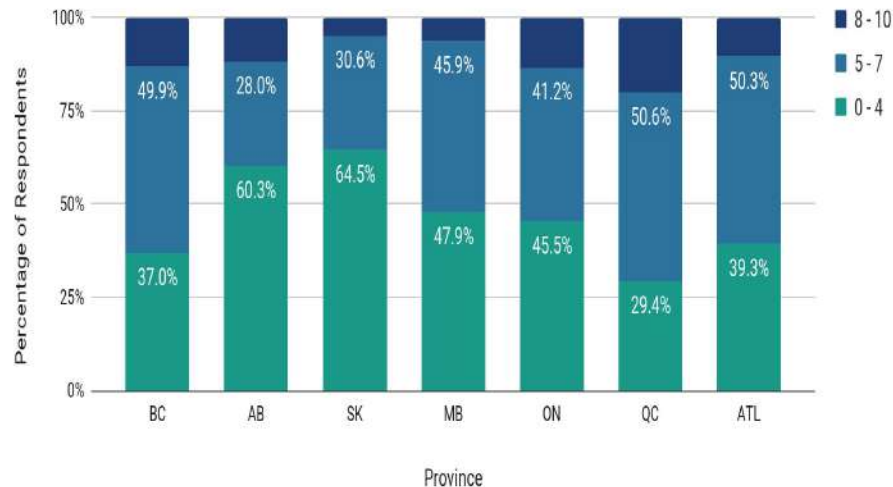
7. To the best of your knowledge, Canada, as an Arctic nation, is more affected by the impacts of climate change	True False Unsure
8. To the best of your knowledge, in the next 20 years Canadian winters are predicted to be colder and to have more snow.	True False Unsure
9. Scientists predict that the amount of temperature increase the Earth system can tolerate is...	Select all that apply: 0-0.49 degrees Celsius 0.5 – 0.99 degrees Celsius 1.0 – 1.49 degrees Celsius 1.5 – 1.99 degrees Celsius 2.0 – 2.49 degrees Celsius 2.5 – 3.0 degrees Celsius Unsure
10. What do the world's countries need to do in order to ensure temperatures stay within the range that the Earth system can tolerate?	Select all that apply: Significantly decrease emissions Move to net zero emissions (balancing a measured amount of carbon released with an equivalent amount of sequestered or offset carbon emissions) Significantly increase emissions Moderately Increase emissions Do nothing Moderately decrease emissions

Number of correct responses to 10 climate knowledge questions.

National Results

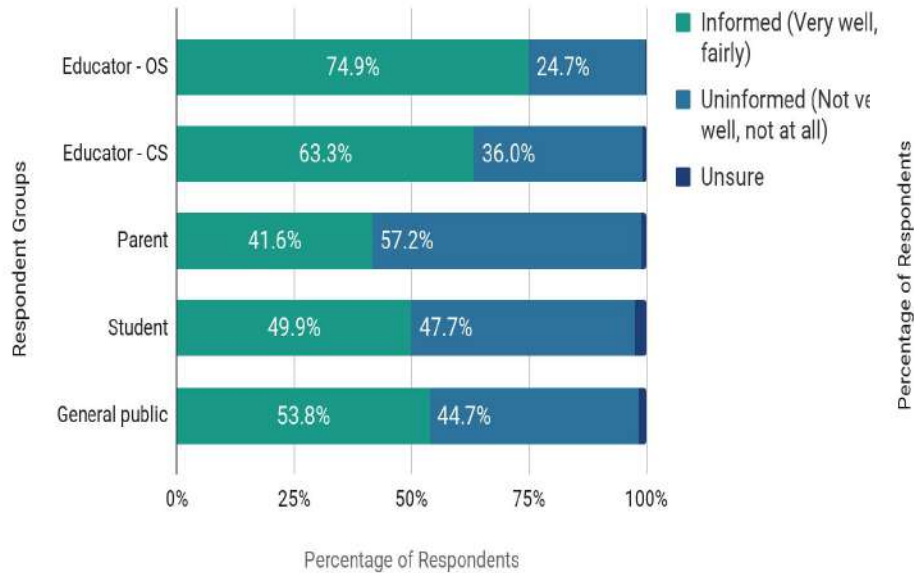


Provincial Results

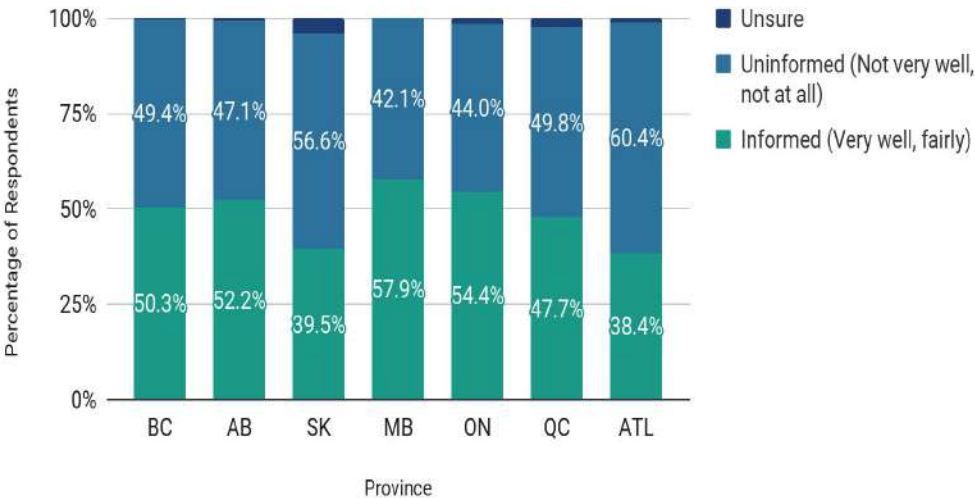


Personally, how well-informed do you feel you are about climate change?

National Results

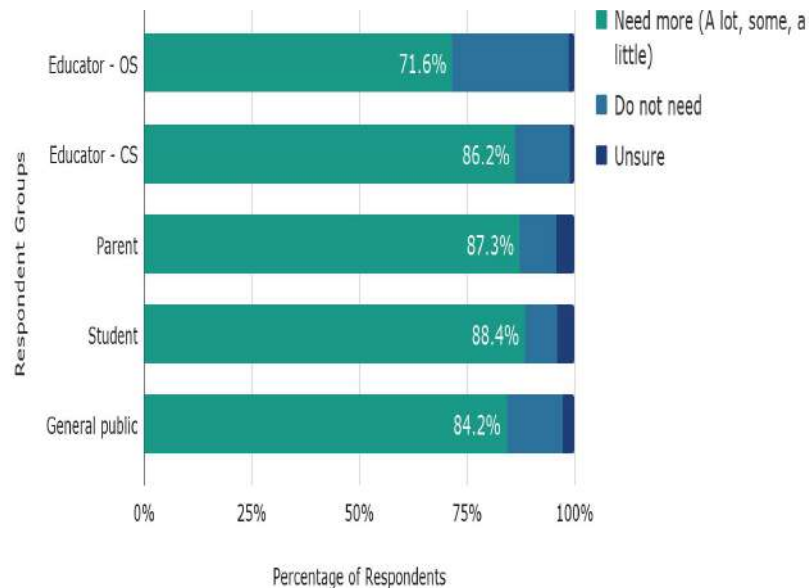


Provincial Results

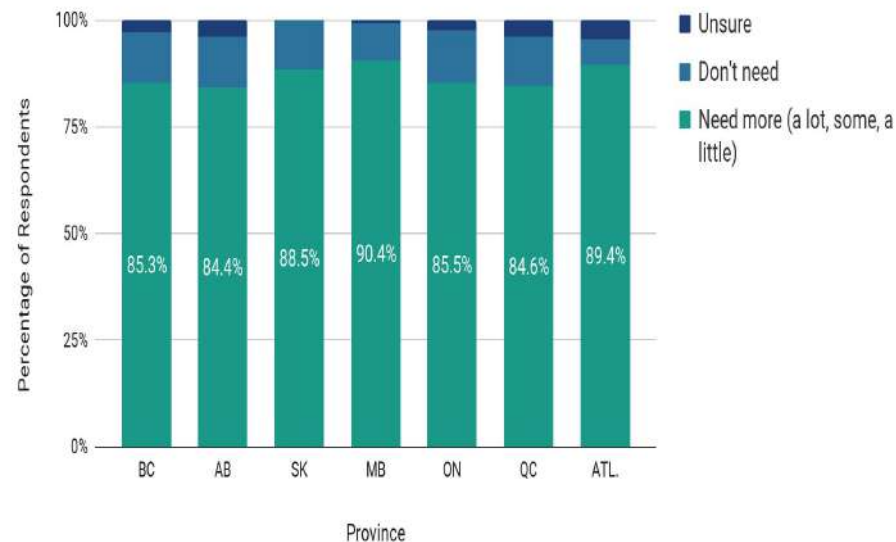


**On some issues, people feel they have all the information they need in order to form a firm opinion, while on other issues they would like more information before making up their mind.
For climate change, where would you place yourself?**

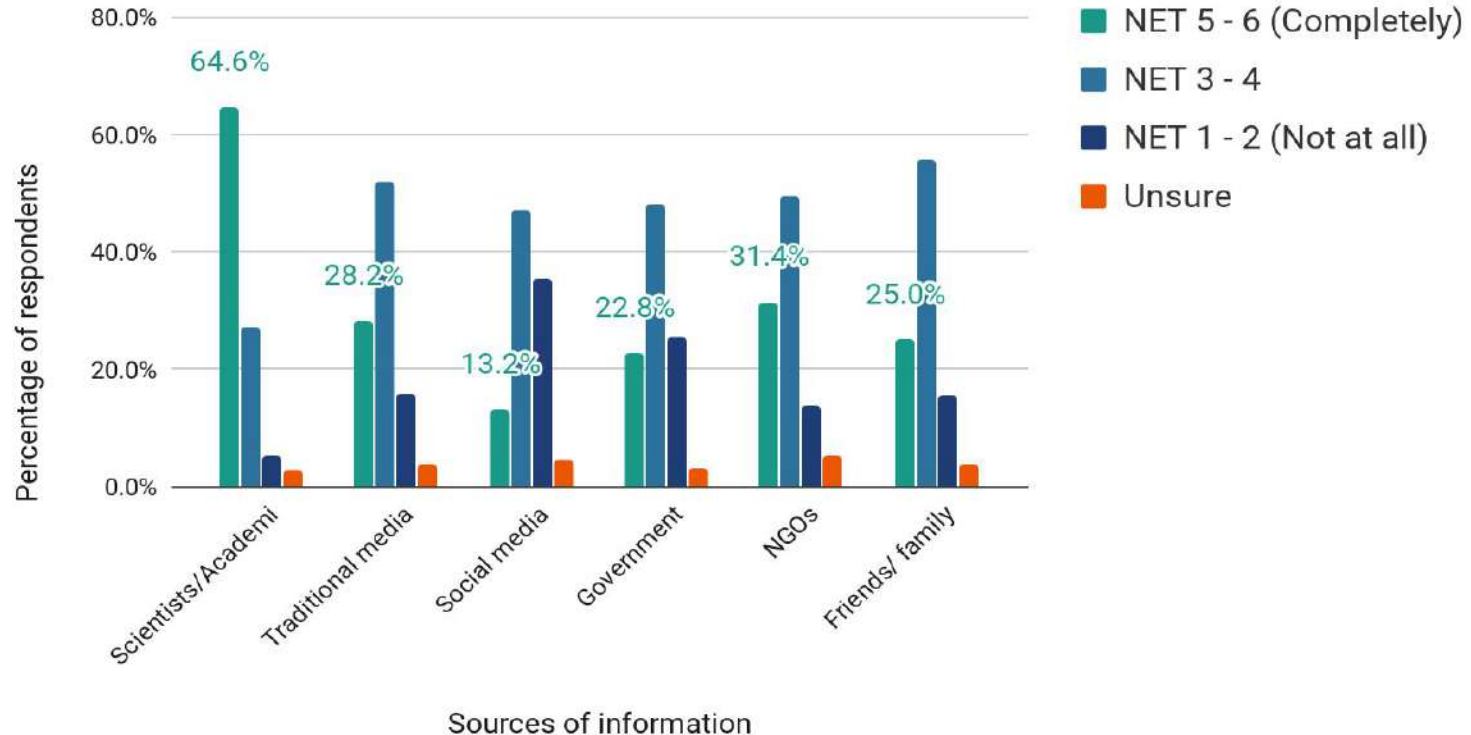
National Results



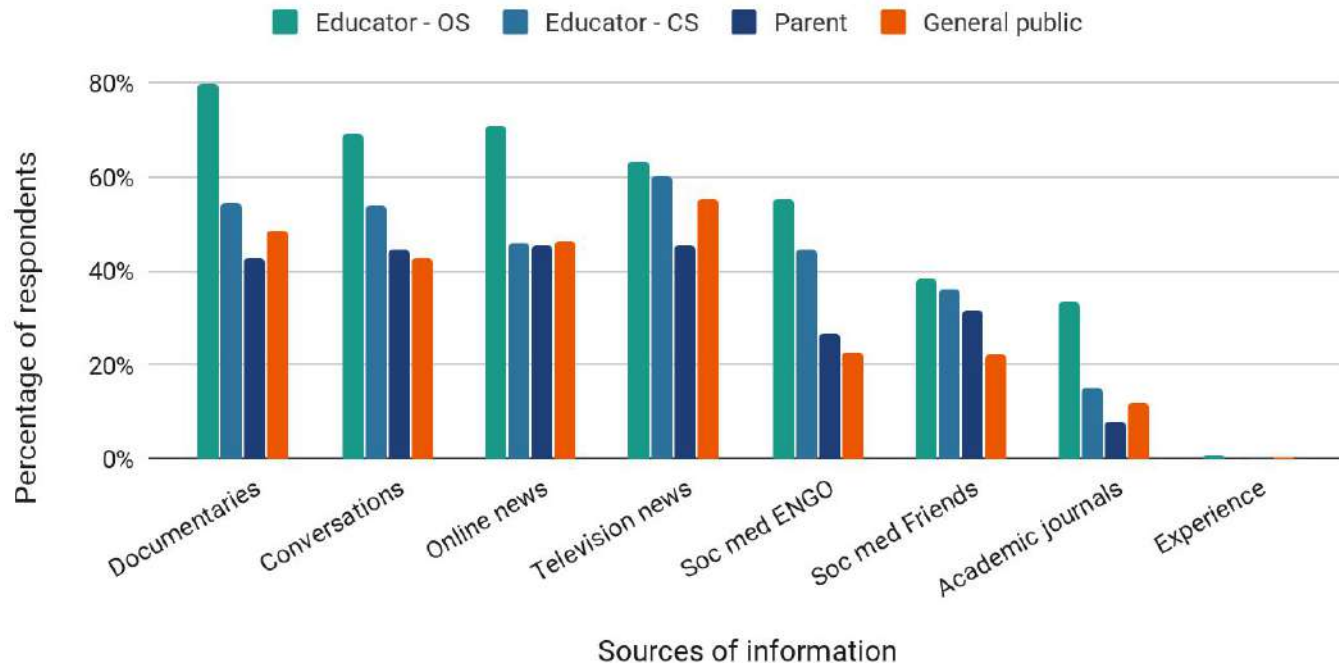
Provincial Results



Trust in different sources of information



Which of the following do you use to inform yourself about climate change?

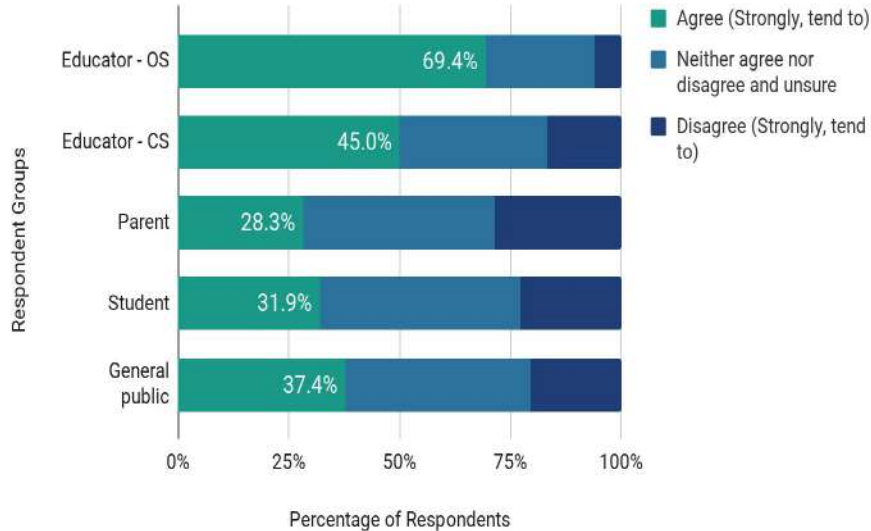




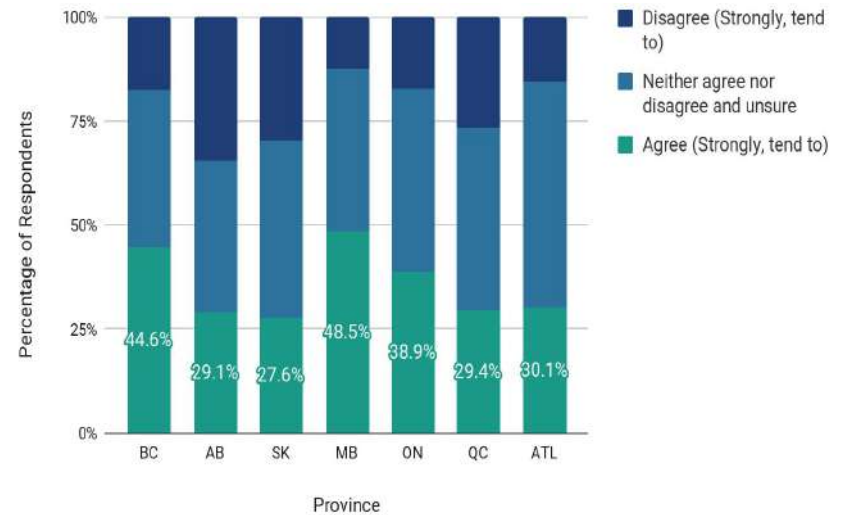
Impacts and Action

I have personally experienced the effects of climate change

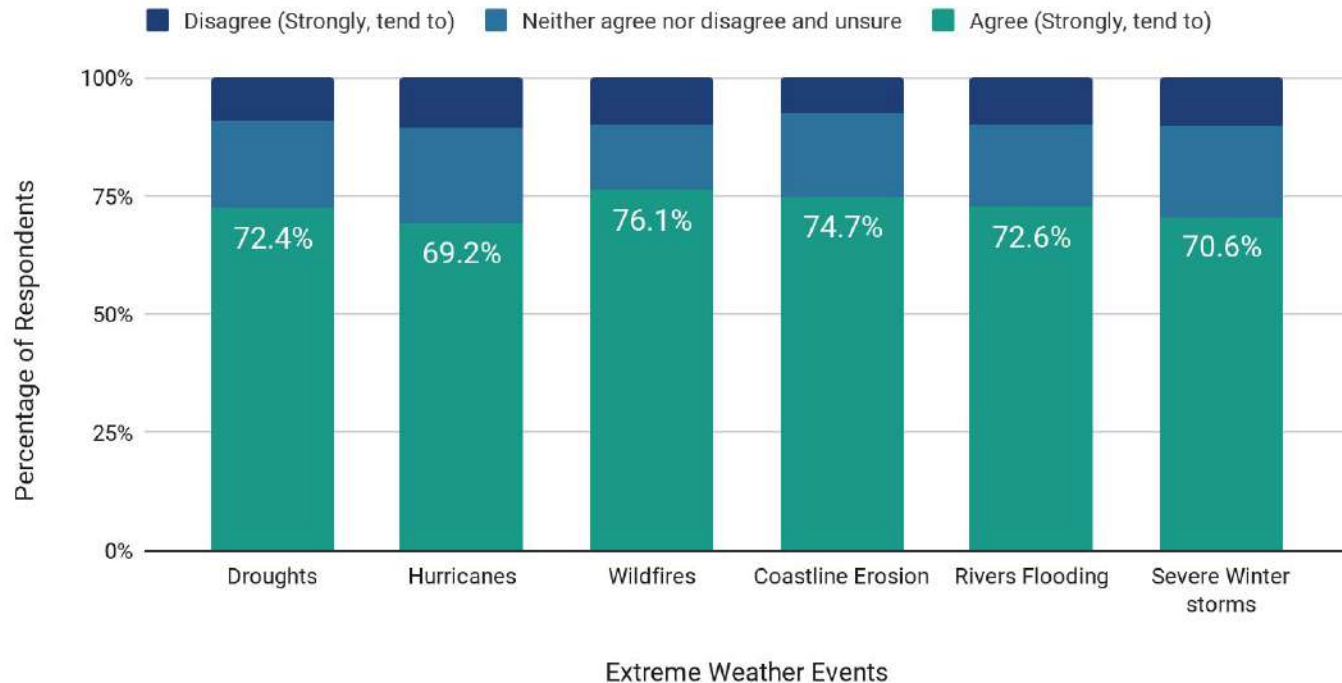
National Results



Provincial Results

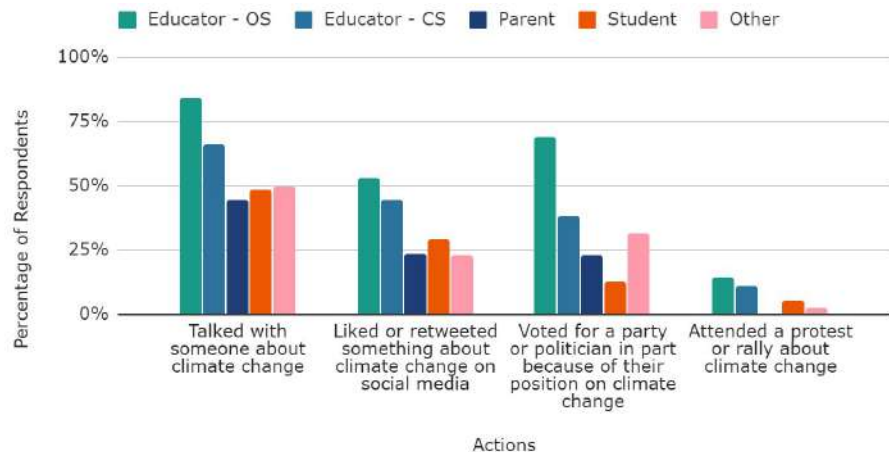


Do you agree or disagree that climate change is already causing or making the following things worse: droughts, hurricanes, wildfires, coastline erosion, rivers flooding and severe winter storms?

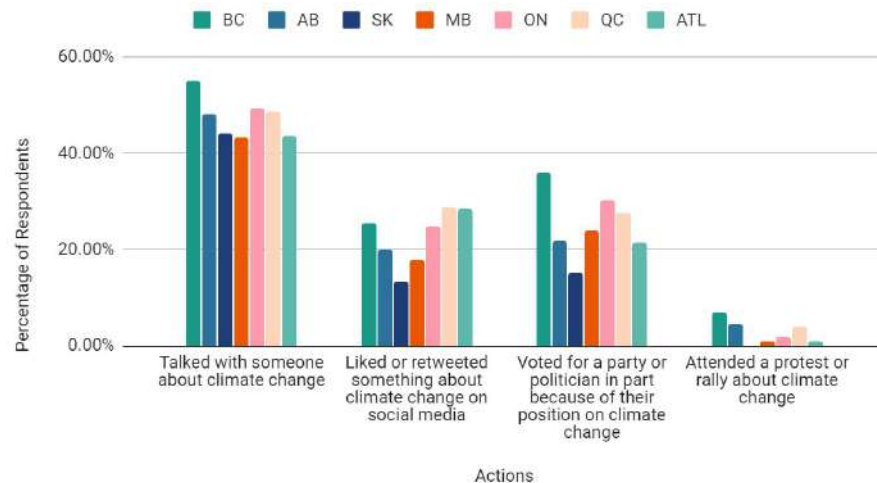


Actions taken to discuss or learn about climate change

National Results

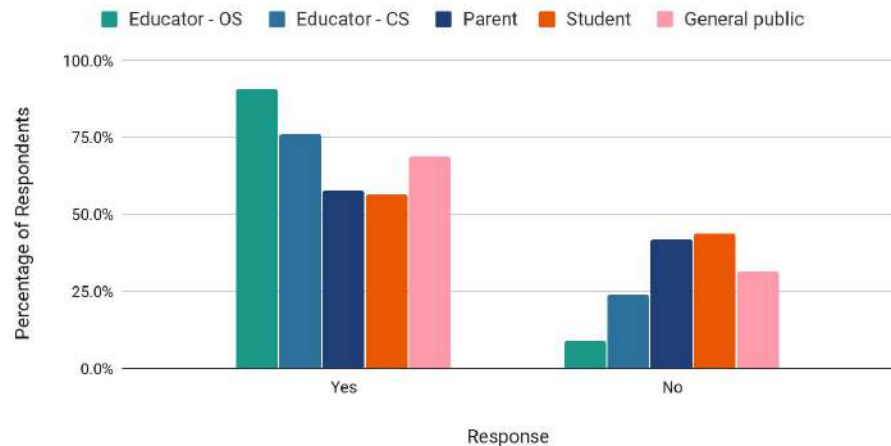


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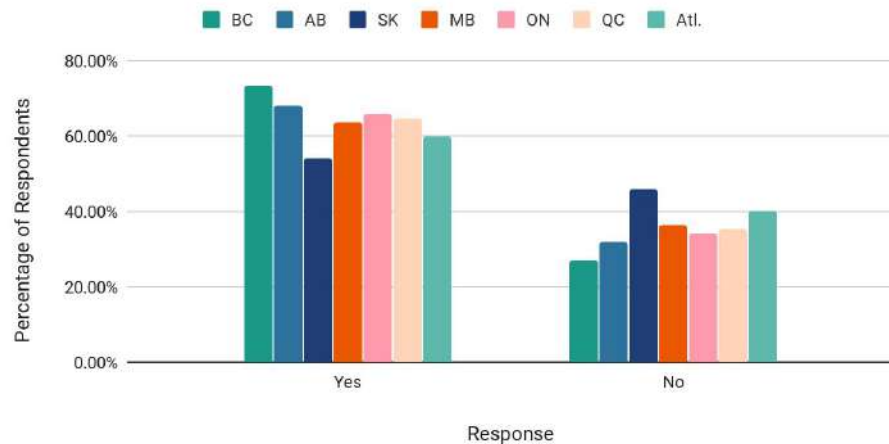


I have personally taken action to reduce greenhouse gas emissions

National Results

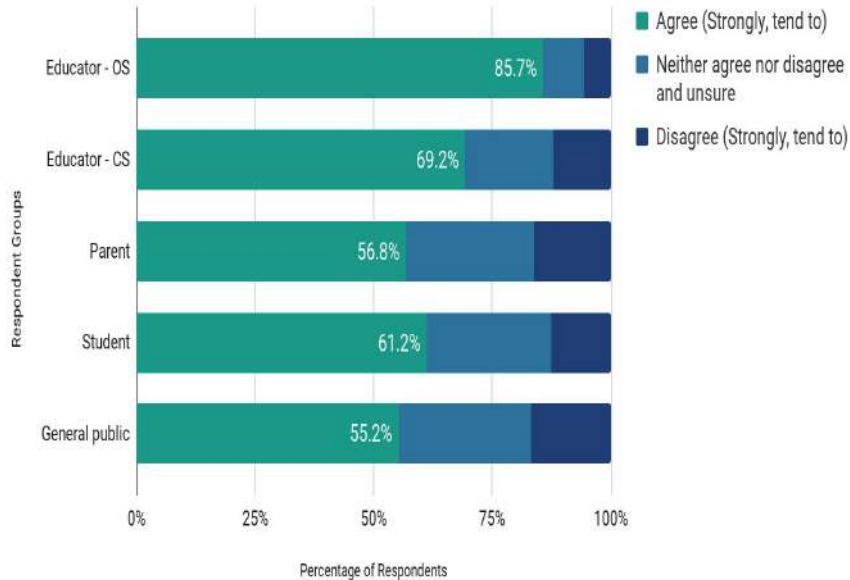


Provincial Results

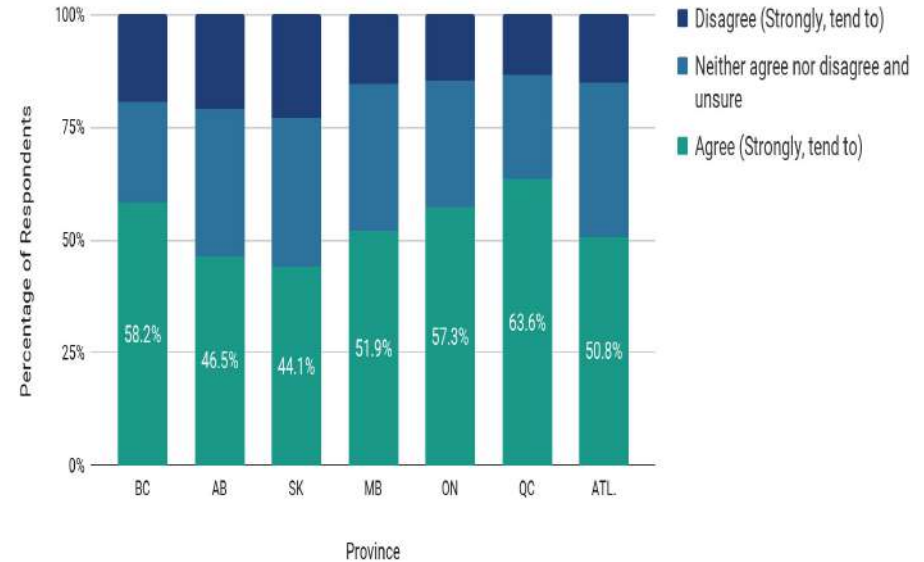


I believe my actions have an influence on climate change.

National Results

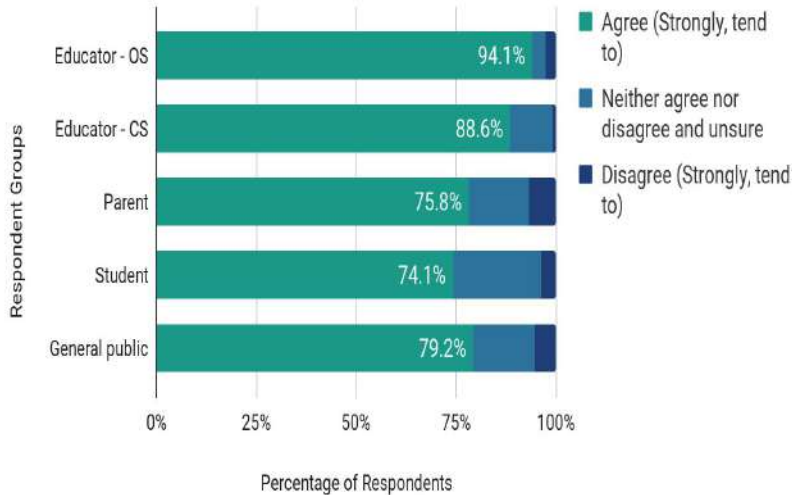


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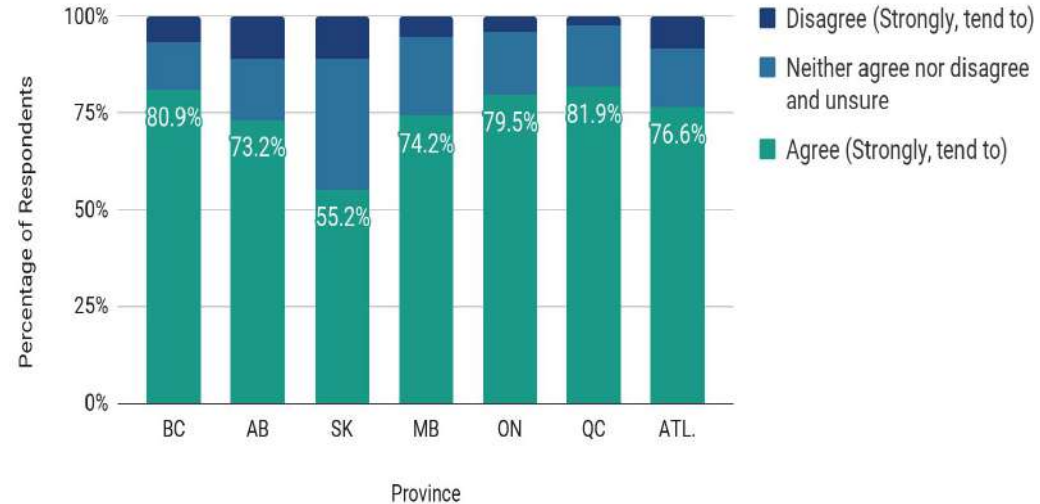


I understand personal actions are important but systemic change is required to address climate change challenges.

National Results

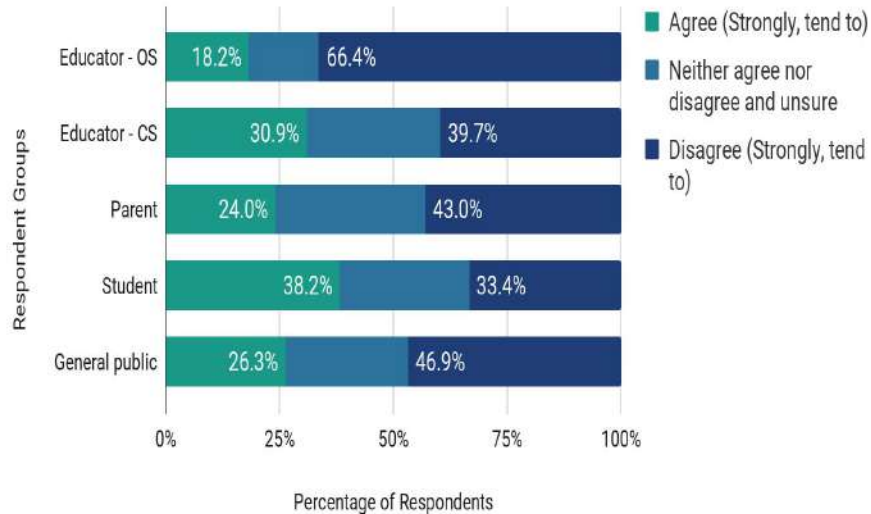


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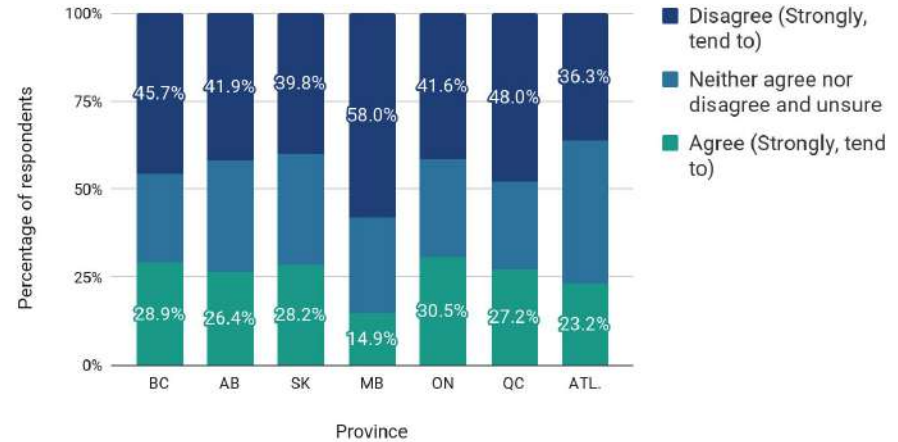


New technologies can solve climate change without individuals having to make big changes in their lives.

National Results



Provincial Results

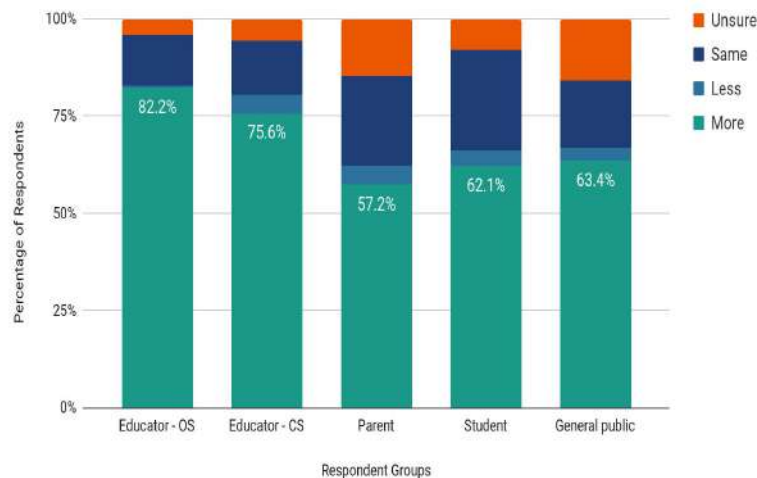




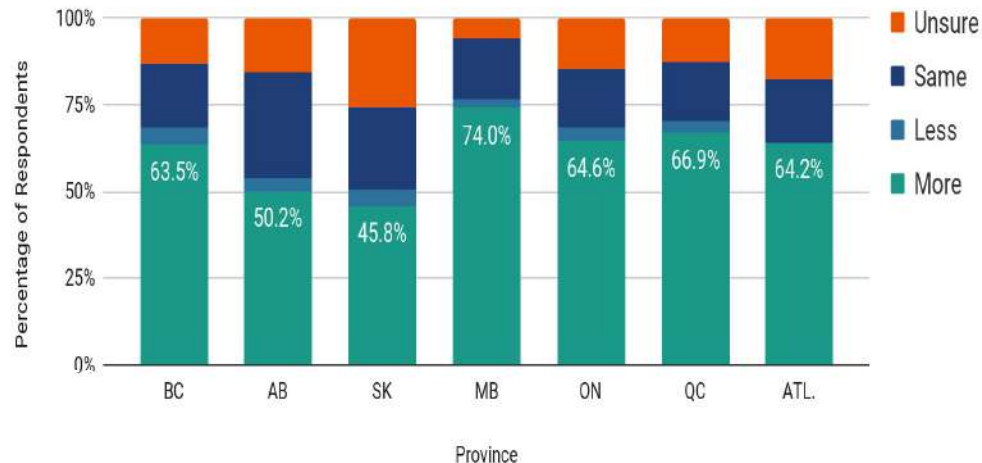
Climate Change & The Education System

Do you think the education system (grades 7 - 12) should be doing more, less, or about the same as now to educate young people on climate change?

National Results

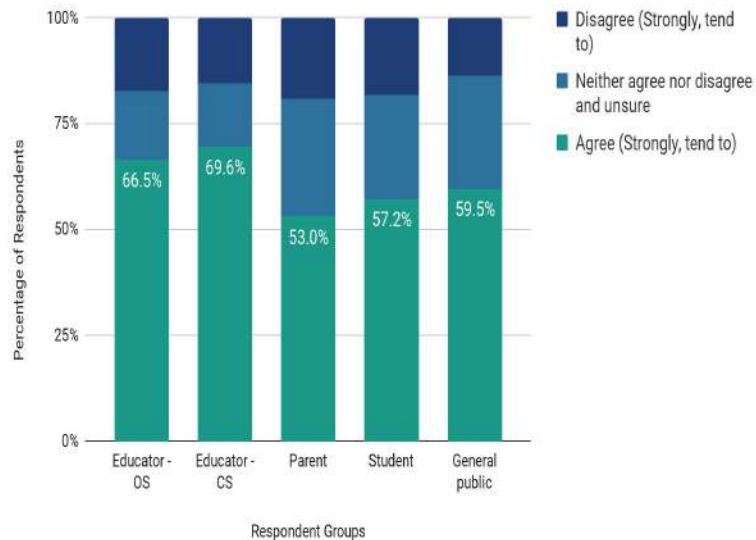


Provincial Results

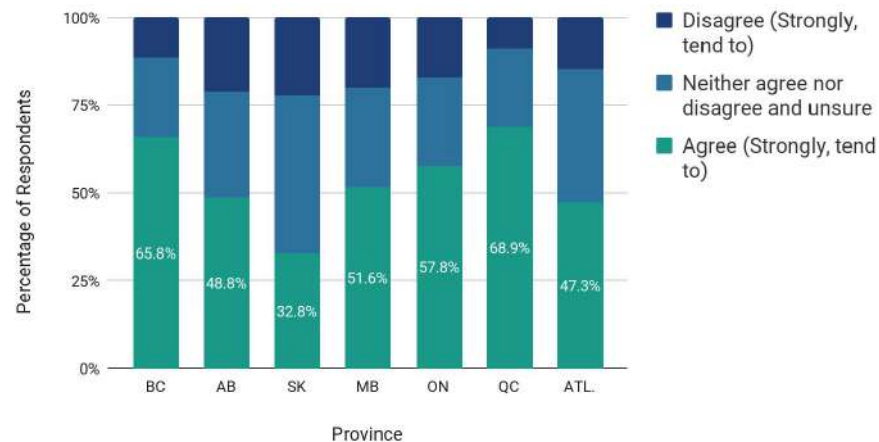


Climate change education is a high priority for schooling

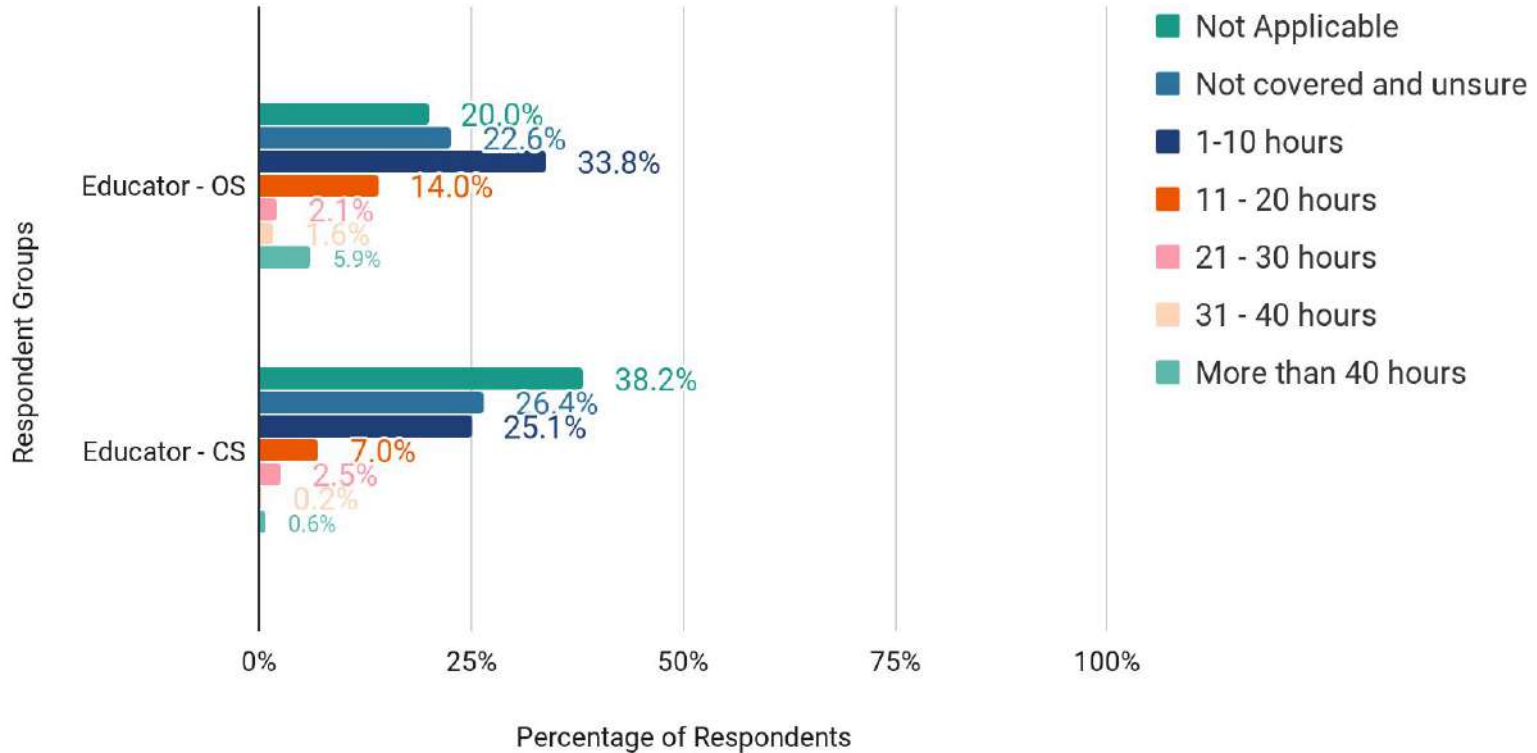
National Results



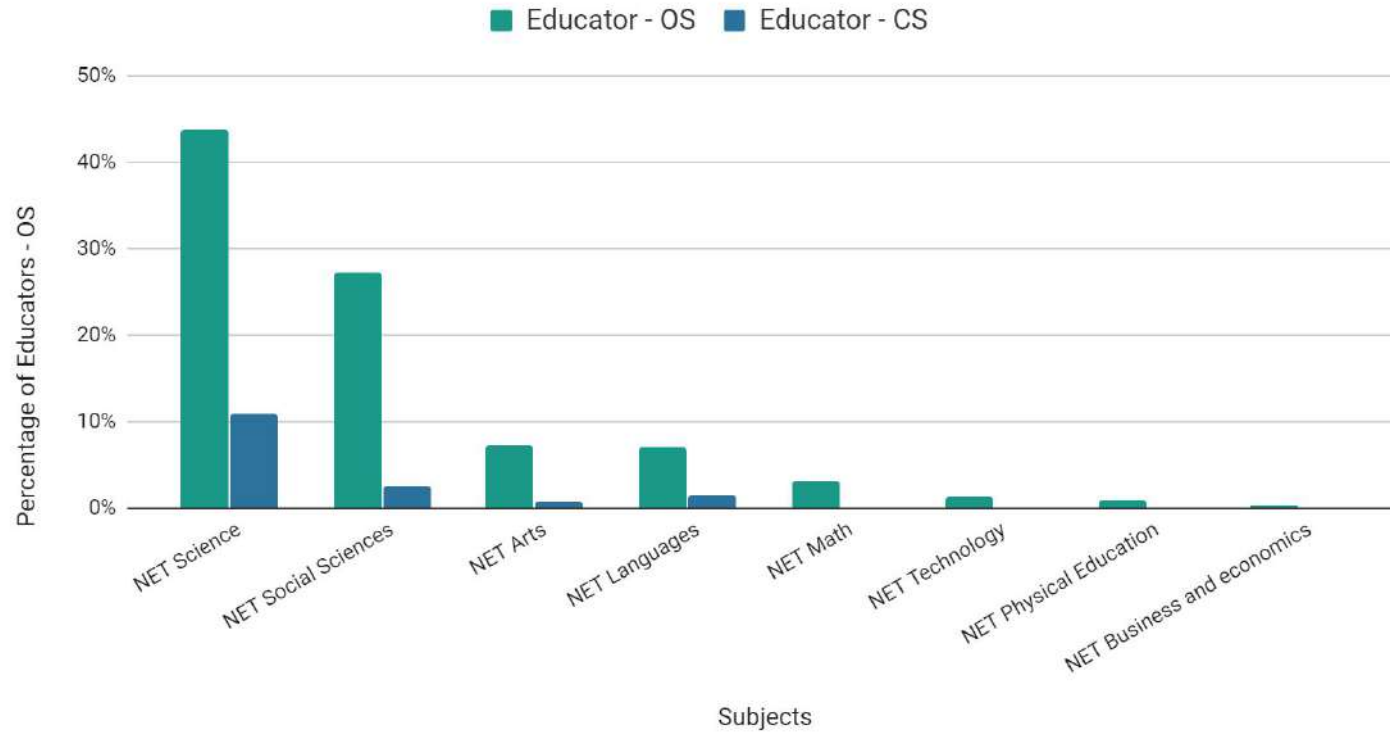
Provincial Results



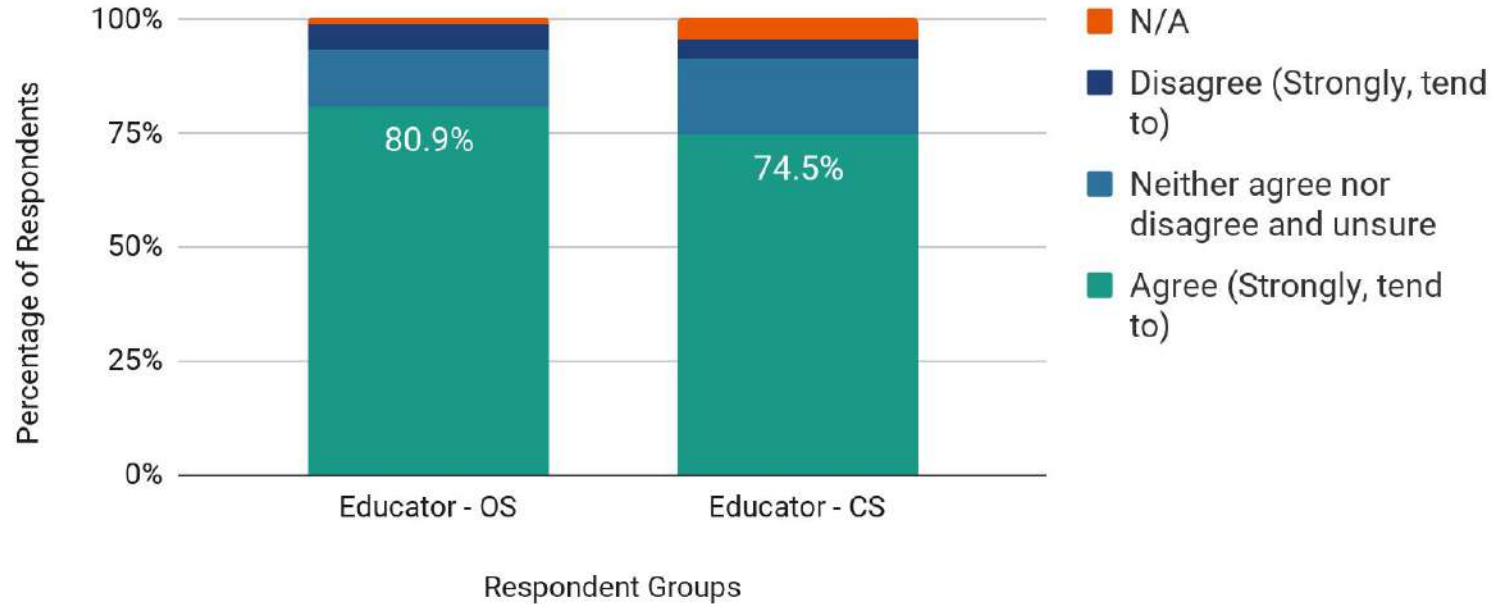
How many hours over a school year/semester would you typically spend covering topics related to climate change in your classroom



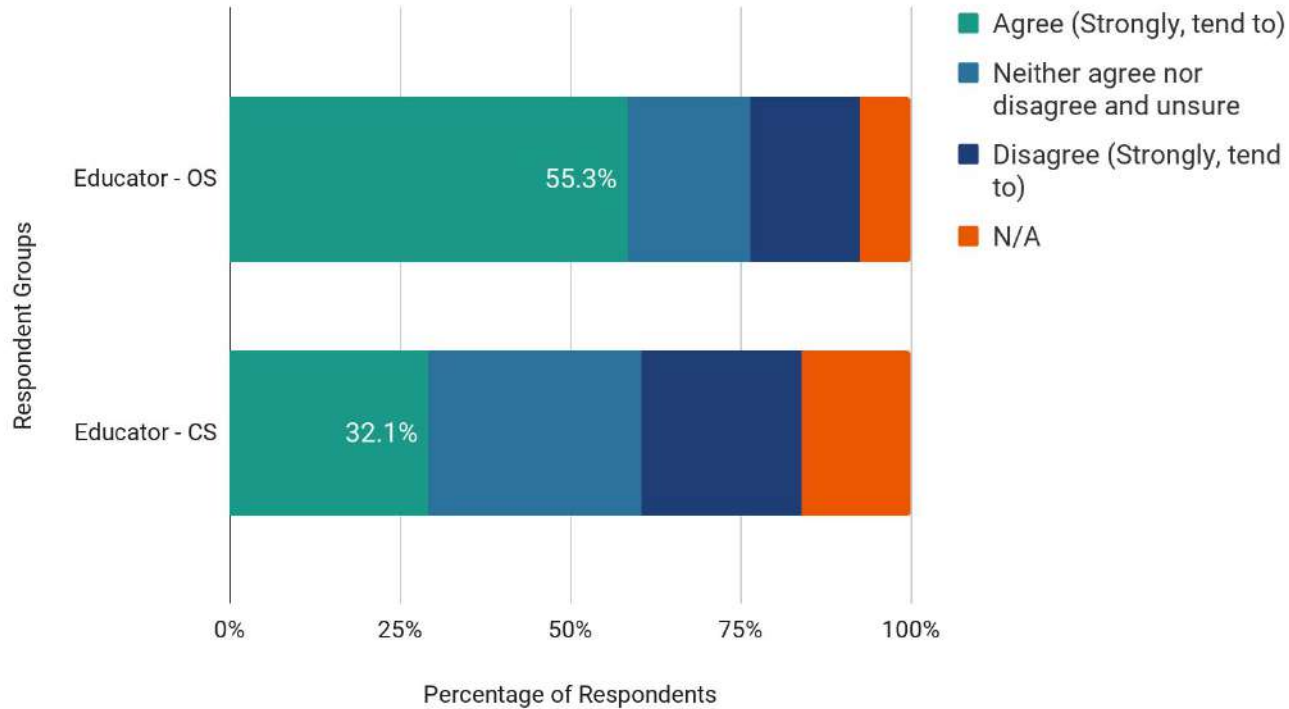
Do you cover climate change topics in any of the subjects that you teach? If yes, which subjects?



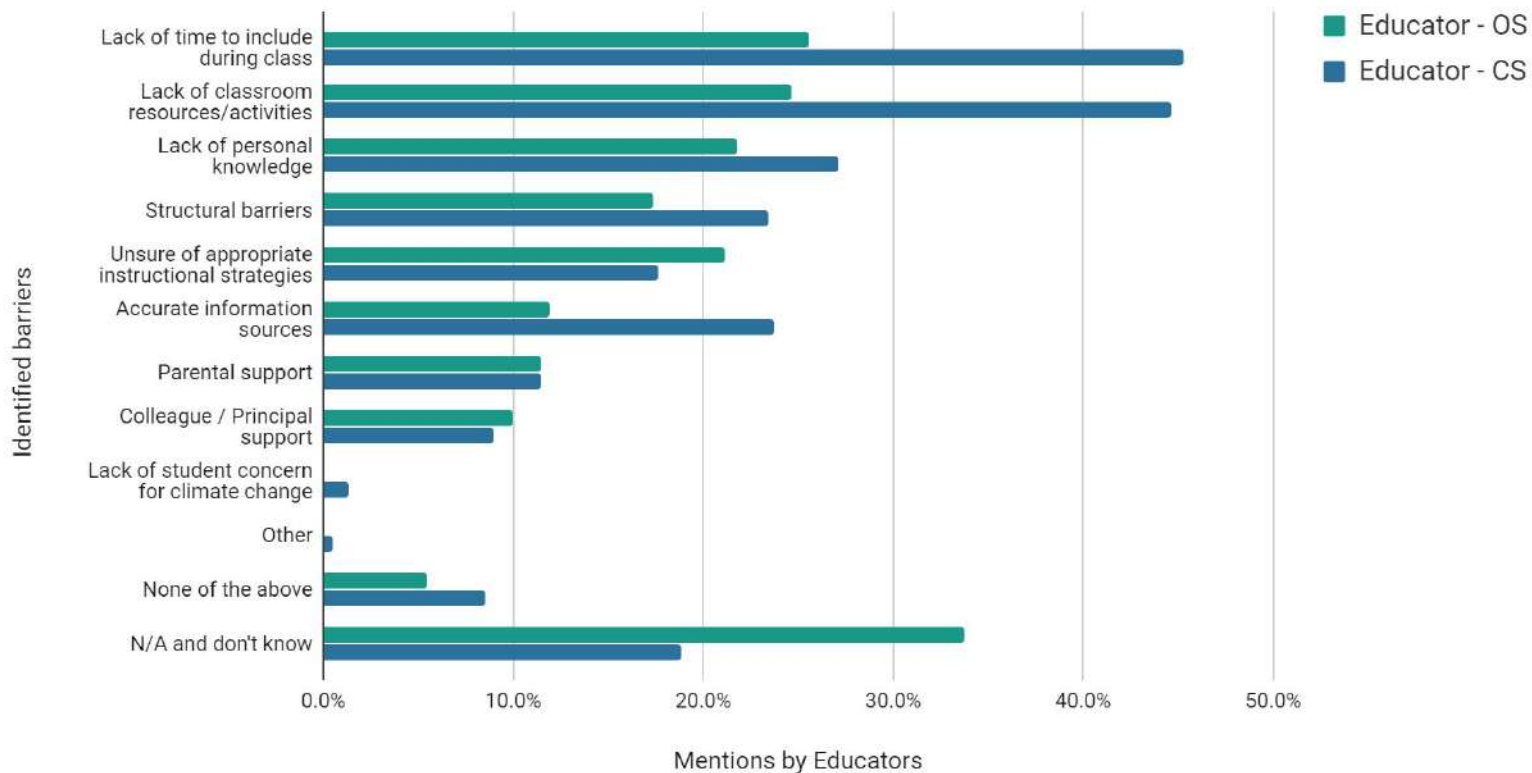
I believe climate change education is the role of all teachers.



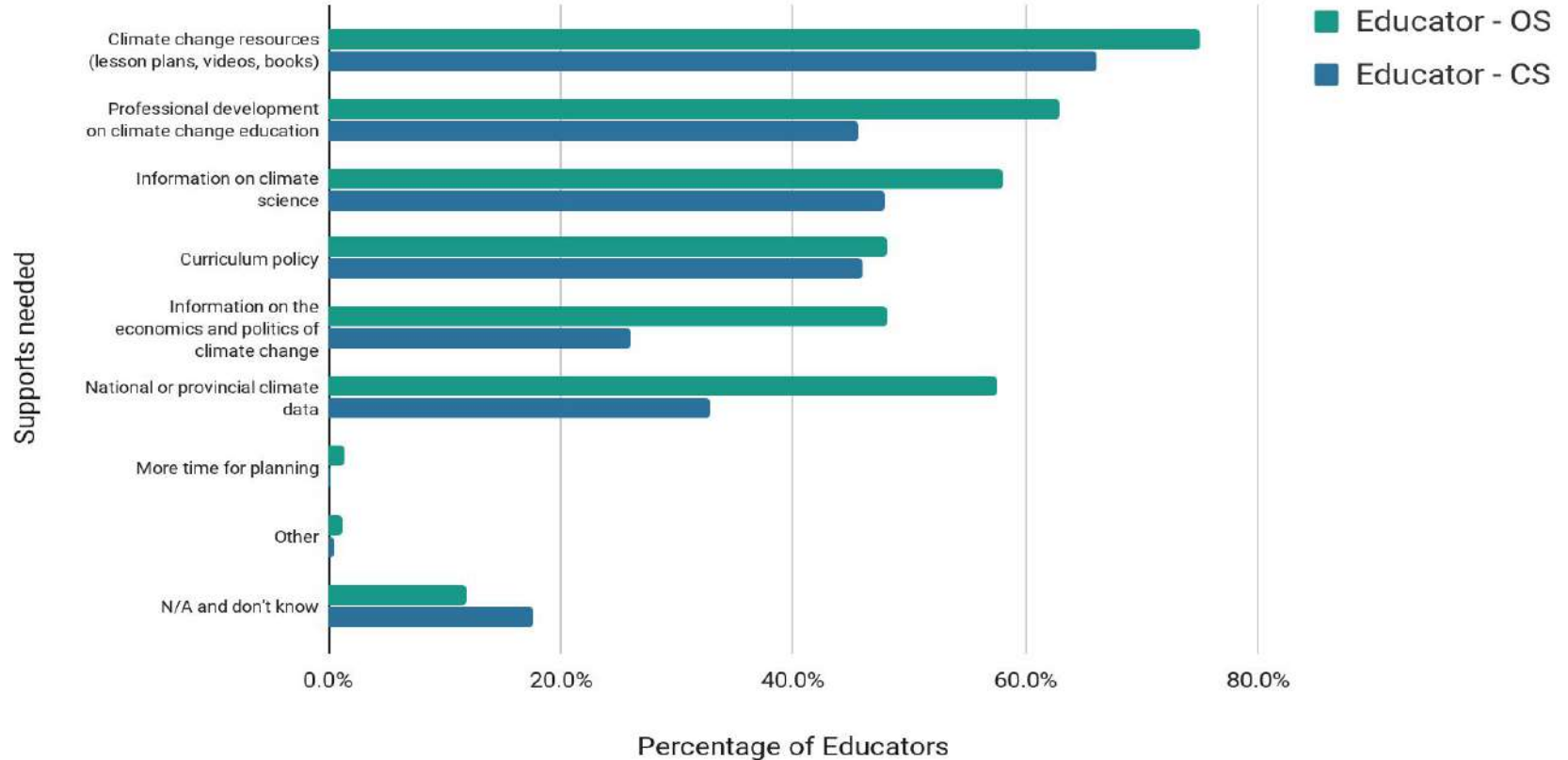
I feel I have the knowledge and skills needed to teach climate change education to my students.



'What are some of the barriers you have experienced when attempting to include climate change education into your classroom?'



'What support(s) do you need to teach climate change in your subjects?'



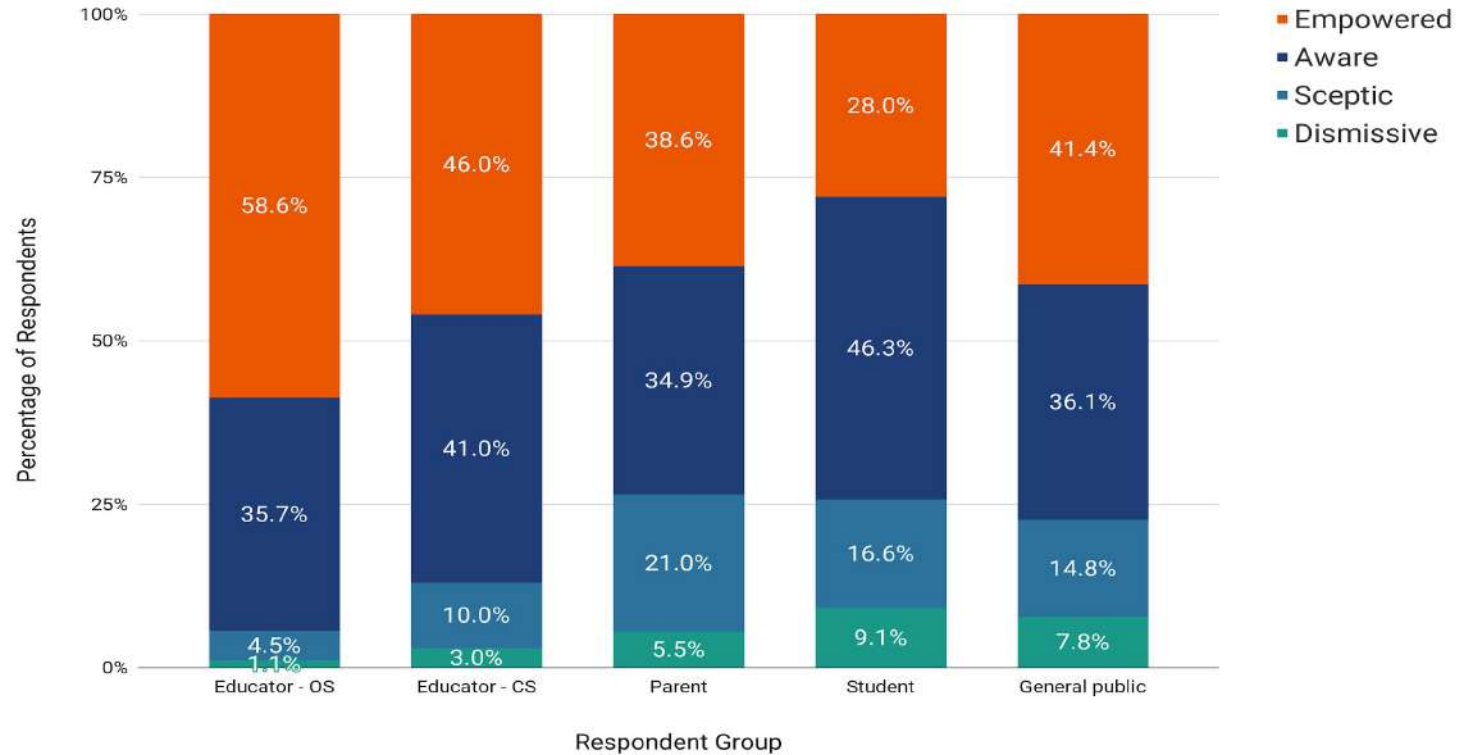
Ladder of Engagement: Overview

EcoAnalytics put forward a Canadian ladder of engagement. The map is comprised of four audiences: *dismissive*, *sceptics*, *aware*, and *empowered*. We chose to apply the ladder of engagement to segmented groups to create a clearer picture of how Canadians perceive and engage with climate change at a broad level.

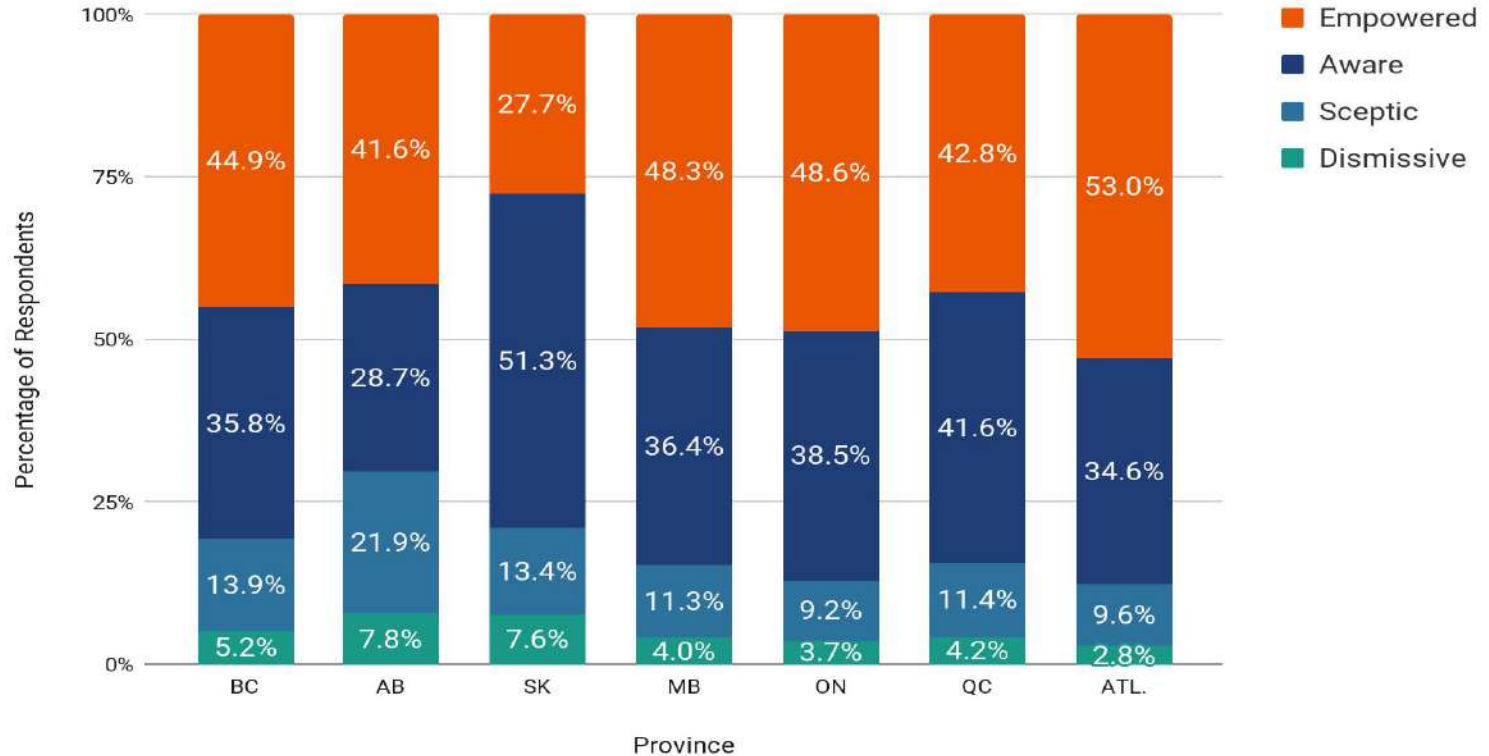
- **Dismissives:** disagree that climate change is happening
- **Sceptics:** agree that climate change is happening and do not think it's caused by humans OR, neither agree nor disagree that climate change is happening
- **Aware:** agree that climate change is happening and do think it's caused by humans AND indicated that there is nothing that we can do to change it
- **Empowered:** agree that climate change is happening and do think it's caused by humans AND indicated that there are things we can do to change it

“In reality, the engagement process is non-linear, but for analytical purposes it helps to present groups of Canadians in a ranking from least to most likely to be “engaged” (Ecoanalytics, 2016).

Ladder of Engagement: National Overview



Ladder of Engagement: Provincial Breakdown



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