



ASSOCIATION OF CLIMATE CHANGE OFFICERS

**BARRIERS TO IMPLEMENTING CLIMATE ADAPTATION PLANS:  
A SURVEY OF CLIMATE PROFESSIONALS ACROSS SECTORS**

COMPLIMENTARY SUMMARY

**ASSOCIATION OF CLIMATE CHANGE OFFICERS –  
CLIMATE ADAPTATION WORKING GROUP**

## **ASSOCIATION OF CLIMATE CHANGE OFFICERS – CLIMATE ADAPTATION WORKING GROUP**

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## Introduction

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**A**s organizations and entities across sectors implement climate adaptation plans and policies, leaders are increasingly in need of high-quality information to make better decisions. To find this information, it is common practice for managers to look to their peers for lessons learned and best management practices. This approach works well for seasoned constituencies who share time-tested experiences, which, it should be mentioned, are often standardized and accredited. However, though rapidly rising in popularity, managing the impacts of climate change is still in its infancy. Field tested lessons have yet to crystallize and best practices have a long way to go before they are standardized. The result is that managers are left to implement ad hoc climate plans with little to no feedback for effectiveness in creating resilience or reducing actual risk.

To help resolve this issue, we took a hard look at the process of planning for climate impacts across sectors. We discovered that instead of looking for a quick fix, managers are faced with many obstacles – some expected; others surprising – as they implement their plans. These obstacles, which we refer here to as “barriers,” range from the simple to the complex. For example, some managers lack the time to research the latest climate change science. Some managers reported that, despite being tasked with managing impacts from climate change, they do not have financial support from their respective organizations. In still other cases, decision makers with clear mandates and well developed plans struggle with training their staff and have a difficult time communicating goals with various stakeholders.

Discovering and sharing barriers to the process of planning for the impacts to climate, therefore, is the central purpose of our research. We believe that this information is critical for leaders to make better informed and economically conscious decisions and judgments. In this respect, the results of our adaptation survey mark a significant contribution to the field of climate adaptation management. This document presents some interesting highlights from the survey. Not all of the data is presented here, and the full report with in-depth analysis is available directly from ACCO.

From our ground breaking survey, we’ve found that managing risk is not, on the whole, a simple issue of accessing off-the-shelf technologies or collecting scientific information. Instead, we’ve found that across sectors, the major barriers lie in the managerial aspects of organizational change and building human resource capacity.

The survey is organized in two parts. In **Part I**, we profiled respondents in the following categories: organizational characteristics; sectors they work in; sources of climate science used to inform decisions; and climate impacts organizations are most concerned with. **Part II** presents the most important data from the survey. We focused on the *barriers that decision makers* faced as they implement their respective climate change plans and policies. Divided into three stages, we analyzed the difficulties in the planning, implementation, and management phases of implementation.

The Climate Adaptation Survey was conducted in September of 2011 by the Association of Climate Change Officers Adaptation Working Group. Findings were presented and assessed at the adaptation workshop, *Enhancing Decision Making: A Roundtable Workshop on Improving the Understanding of the Economic, Environmental, and Operational Implications of Climate Change*. Held September 26, 2011, the workshop was hosted by DePaul University Chaddick Institute for Metropolitan Development. Attendees of the conference represented leadership from across sectors.

## Key Themes

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Four major themes were identified. They show that much progress has been made in the field of adaptation planning within a few years' time. We also found that decision makers need easier access to high-quality tools. For example, they need a reliable database of best management practices, and a support network to help build capacity within their respective organizations.

- **Over 50% of organizations across all sectors surveyed have implemented climate action plans that include adaptation component.** Considering that climate adaptation planning is in its infancy, a 50% rating illustrates a major trend. This high percentage applies across all major sectors and its significance should not be underestimated. We believe this finding marks a tipping point in the field climate change adaptation and risk management.
- **Decision makers face significant barriers implementing climate action plans.** The most important information from this survey is discovering the barriers that decision makers faced while implementing their plans. The types of barriers reported varied in both the process (e.g., stages) of implementing plans and within sectors. For instance, over 50% of state and local governments, academic institutions, consultants, and government entities emphasized the need for training staff and increased budgets. On the other hand, the Federal and private sectors had higher concerns regarding deficient support from leadership, lack of quality downscaled climate models, and uncertain ROI. Surprisingly, some NGOs and non-profits reported a need for new computer equipment.
- **Sources of climate data and science that decision makers use to make informed decisions vary widely across sectors.** Respondents indicated they looked to government reports, peer-reviewed journal articles, and scientists and researchers. Disconcerting was the high ranking respondents gave to getting climate information from conferences, magazines, "the Internet," and news media.

We believe this highlights a need for easier access to climate science information – perhaps an accredited clearing house, an open-source database, and/or some type of industry standardization. Whatever the format, it became clear that decision makers require greater access to useable climate science information and higher-quality educational materials.

- **Strong need to build networks with other decision makers to share best practices and lessons learned.** Decision makers across sectors voiced strong need for compressed, more concise educational materials. They were especially vocal in calling for partnerships, workshops, seminars, and conferences to assist networking and training staff.

## Survey Overview

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Organized into four interrelated sections, the anonymous survey had 18-questions and included opportunities for comments and suggestions. The survey focused on barriers to incorporating climate adaptation<sup>1</sup> into organizations. We defined adaptation as "the ability to change socio-economic systems in response to experienced or expected climate change impacts interacting with non-climatic changes" (Moser and Ekstrom).<sup>2</sup> This definition informs the structure and focus areas included in

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<sup>1</sup> While the IPCC's definition of adaptation is authoritative, Moser and Ekstrom's definition serves the purposes of this more narrowly scoped survey.

the survey. More information regarding the design of the survey is presented in the final report, which is available from ACCO.

The first section of the survey determined the characteristics of the organizations being interviewed, such as sector, location, and constituent stakeholders. Characterizing the participants of this survey allows the researchers to group together similar organizations. This strategy will help to uncover any trends or differences that exist among the groups.

This section also helped determine the sources of climate science that organizations use, and what measures they have taken to incorporate this information. Determining sources is vital to analyzing the reliability of information used in the field. It will also help members of ACCO (and especially the Adaptation Working Group) understand how decision makers shape their climate strategies. In addition, this will help identify potential projects for the communication sub-component of the working group's activities.

The second section of the survey covers barriers organizations face while implementing climate plans. Barriers are obstacles to be overcome by decision makers. These barriers vary significantly during each phase of implementation.

We divided barriers into three progressive stages: understanding, planning, and managing. Barriers in the understanding, or early phases, include the inability to detect the problem, difficulty gathering and using relevant information, and clearly defining the problem. Barriers faced in the planning phase include developing options, such as goals and criteria, assessing options, and selecting options. The last phase is managing, where barriers include implementing selected options, monitoring outcomes, and evaluating effectiveness.

The final section of the survey, not presented here, is a text analysis of hundreds of comments by respondents in various categories.

These findings were presented at the aforementioned adaptation workshop, co-presented by the United States Global Change Research Program, ICLEI Local Governments for Sustainability, and Chicago Clean Energy Alliance. Hosting provided by DePaul University Chaddick Institute for Metropolitan Development. Funding and technical support provided by Environment Canada and Project Performance Corporation. Contributions, research, and guidance were provided by the co-chairs and members of the Adaptation Working Group, Board Members and staff of ACCO, staff with Project Performance Corporation, staff from Environment Canada, and several volunteer readers.

The Adaptation Working Group promotes adaptation educational opportunities helps act as a bridge for adaptation into the mandate of external organizations. The group advises decision-makers on the implications of adaptation policy making, climate risk analysis, and related activities. The Adaptation Working Group focuses on three areas:

- Effectively communicating climate science and climate change impacts;
- Integrating adaptation into business and operating risk management; and
- Assisting members in the development of regional adaptation strategies.



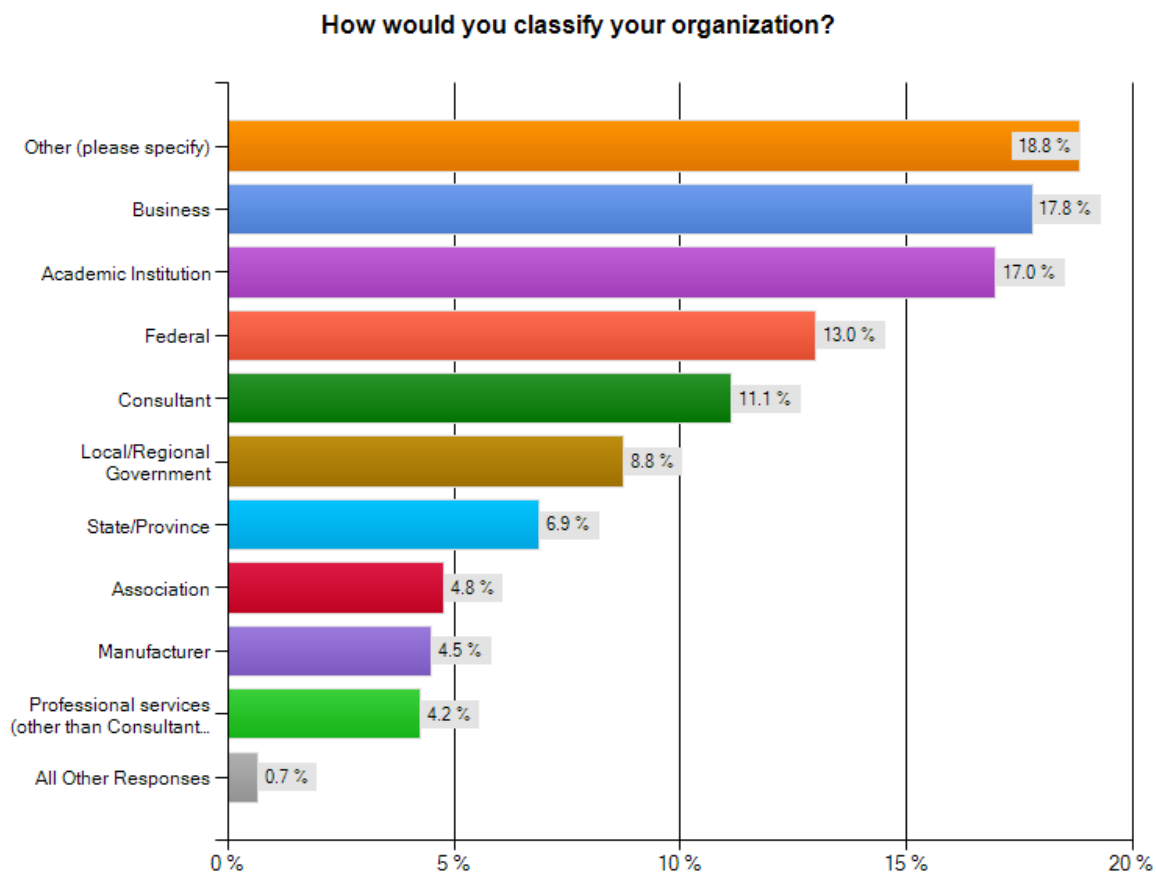
# **PART I** Organizational Profiles

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This section presents a few highlights regarding organizational profiles. We asked respondents to describe their respective sector, expected impacts, stakeholders groups, and sources of climate science used. The first section of the survey included 10 questions on profile. Presented below are the results of questions 2, 6, 7, and 8.

### Question 2. How would you classify your organization?

Of the 377 responses, 19% responded as “other.” In the comment section, “other” respondents indicated they were environmentally oriented either non-governmental, non-profit, or a think tank organizations. The next highest were 18% business sector, 17% academia, and 13% federal government. The remaining 30% were dispersed among state and local governments. We note that manufacturer, consultant, professional services, and association could have been included in the “business” sector. If we had done so, than the vast majority – nearly 40% – of respondents are in fact from the private sector.

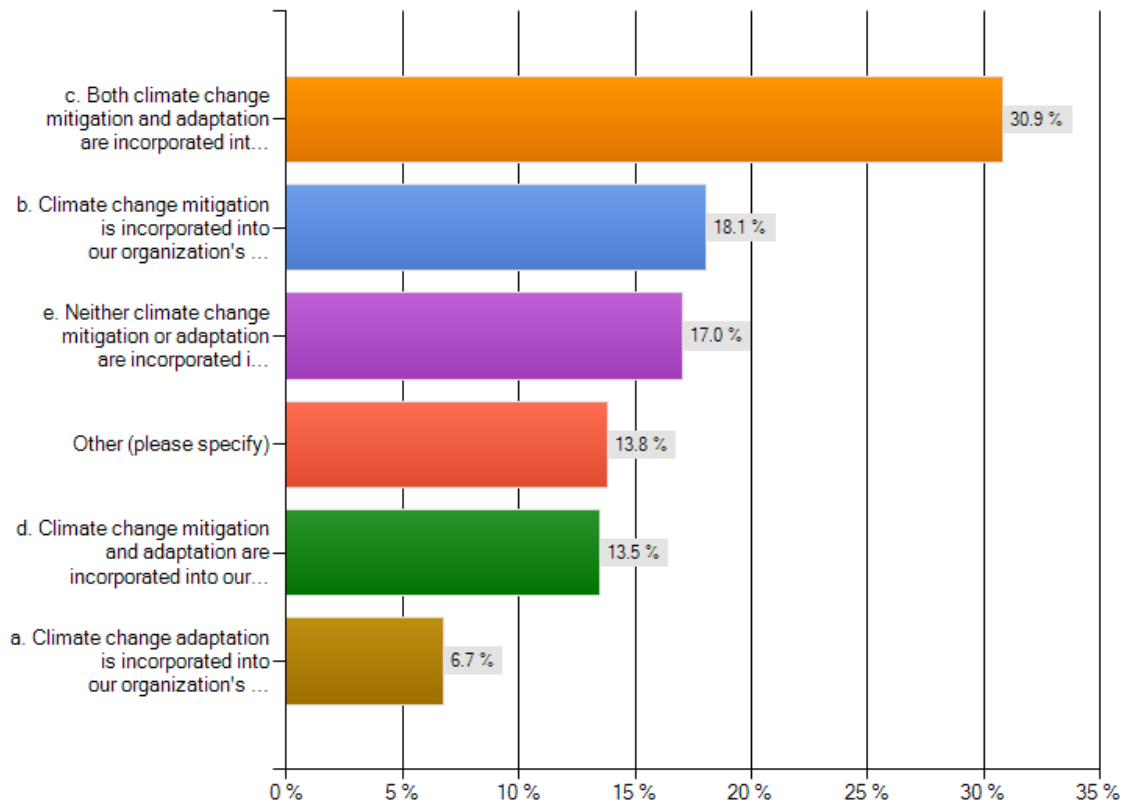




## Question 6. Is climate change incorporated within your organization's policies?

This chart shows the distribution of organizations that have institutionalized climate change plans. The majority (31%) of respondents indicated they had both adaptation and mitigation as *integral parts* of their climate plans. About 18% indicated they were conducting only mitigation planning. Conversely, only 6.7% indicated that adaptation was incorporated as a stand-alone plan within their respective organizations. This is because most organizations have been focusing on reducing greenhouse gases and had yet to consider the physical risks. In other words, this shows that organizations are more likely to conduct both mitigation and adaptation at the same time.

Yes or No: Is climate change incorporated within your organization's policies?



## Question 7. Please briefly describe your organization's climate policies, plans, or motivations.

Question 7 was an open-ended, anonymous comment space for respondents to describe their organization's climate plans. This question compliments question 6, and there were 212 answers. There were no consistent patterns, though most sectors indicated they were in varying stages of implementation. Some highlights:

"The WTO Task Force on Climate-Neutrality was established in 2008 to move the WTO Secretariat towards climate neutrality. The work of the Task Force has included information-gathering on the approaches of the UN and other institutions to climate neutrality; preparation of annual GHG emissions inventories; active coordination with the WTO Renovation Task Force; and identification of key areas for action. The Task Force continues to monitor WTO's efforts in moving towards climate neutrality."

"Council(sic) has programs to reduce our own energy consumption and waste generation, and to assist the local community to reduce their energy consumption and waste generation. We have a peak oil policy and strategies to cope with shortages of fuel, we have a general assessment of the likely impacts of climate change on temperature, rainfall, storms, wind, sea level rise and flooding, and more detailed studies on the likely impacts of sea level rise on flooding around the Lake foreshore and on coastal recession. We have approx 8000 properties likely to be affected from sea level rise, so we need to start thinking about adaptation, and if retreat is part of the scenario, where we will be constructing replacement housing."

"As a small consulting firm we have no official policy, however, our culture supports sustainability and limiting our contribution to the depletion of resources and GHG."

"We have worked with EPA region 4 on a lean-to-green event and conducted an extensive study of our energy use. Through our work together we saved over 35% of annual electric consumption. In addition, we have worked with EPA staff as a follow-up to capture the environmental impact since we do not have expertise on staff. Our long-term goal is to evaluate our supply chain and work toward a zero waste facility at point of origin and point of consumption of our products..."

"In 2007, we developed our first 'strategy' to begin to understand implications of climate change to water resources and EPA's water programs, and to begin to take steps to build resilience. We will soon publish an updated strategy. Areas of concern: Water Quality, Water Infrastructure, Watersheds and Wetlands, Coastal and Oceans."

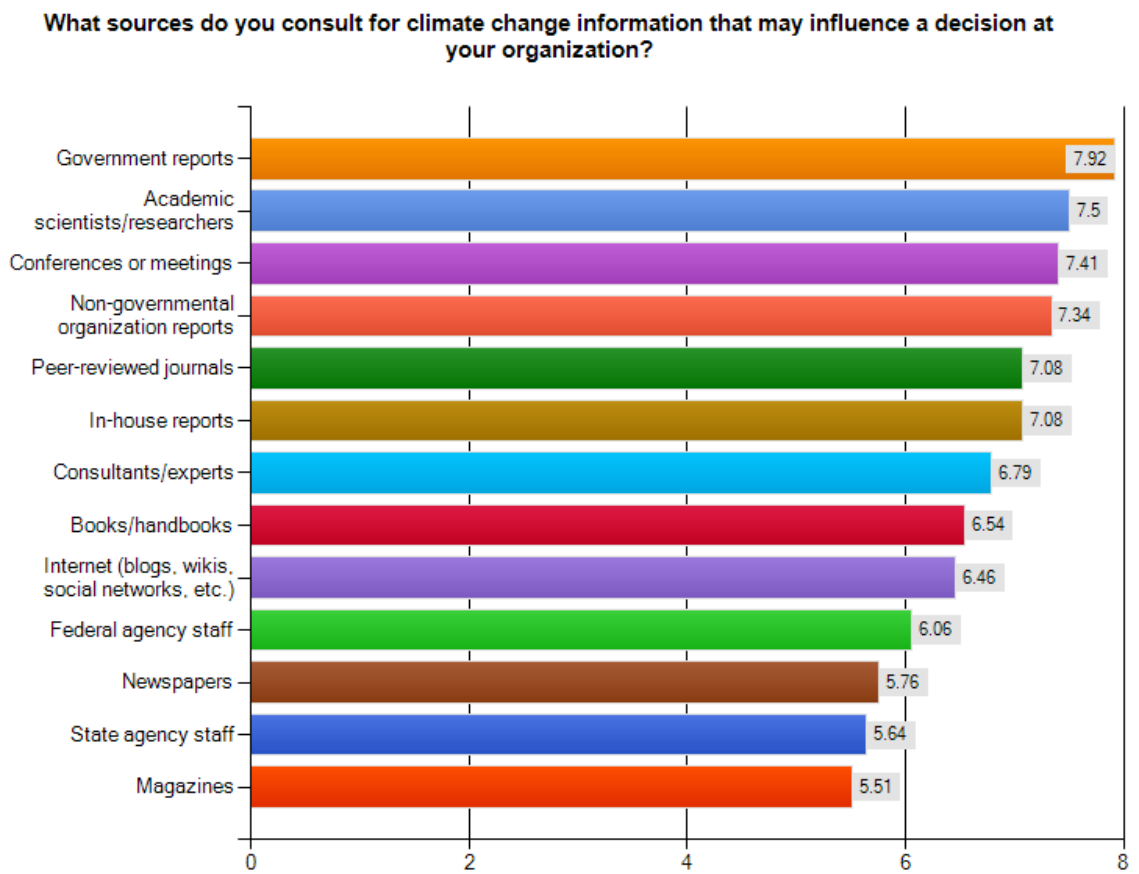
"Largely focused on energy, travel, and paper savings."

"My organization does not have any climate change policy at present. However plan are already on ground...to initiate a curriculum change to incorporate climate change issues."

### Question 8. What sources do you consult for climate change information that may influence a decision at your organization?

With 282 responses, this “rating” question focused on where organizations get their climate science and data from. The 10-point scale ranged from “Never” to “Occasionally” to “Always.” Responses leaned slightly towards government reports (orange), scientists (blue), conferences (purple), and peer reviewed (green) articles.

However, we note that the margin between the top and bottom sources is not very wide. Ideally, decision makers would consult the best available science and research. Instead, respondents reviewed climate information from all sorts of sources, including blogs, conferences, and magazines. It is clear, therefore, that decision makers are in dire need of educational materials and expertise.





## **PART II** Barriers in Planning

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This section highlights key findings from the heart of our survey. Of 18 questions, eight focused on barriers. Presented below is an overview of the results and highlights from questions 11, 12, 13, and 14. Not all of the data could be presented here, and the full report with in-depth analysis is available directly from ACCO. The main purpose of the survey was to discover the barriers decision makers face while implementing climate action plans.

Barriers impede an organization's ability to effectively deal with the impacts of climate change. Following the framework of climate researchers Susanne Moser and Julia Ekstrom, we divided barriers into three parts, *Understanding, Planning, and Managing*.<sup>3</sup> We asked respondents to describe the level of difficulty they faced at each of these stages. The three stages were analyzed both separately and as a combined set. The combined set provides readers the "big picture" perspective of all three stages. We discovered that as an organization progresses through each of the three stages, they faced tough and more difficult barriers to implementing their adaptation plans.

When isolated, these categorizations allowed us to measure and examine which stage of climate planning respondents were within their respective organizations. Managers at each stage of implementation reported having their own unique sets of barriers. Further, different sectors reported having different types of barriers. The report breaks out these issues in more detail. The framework for the three stages is as follows:

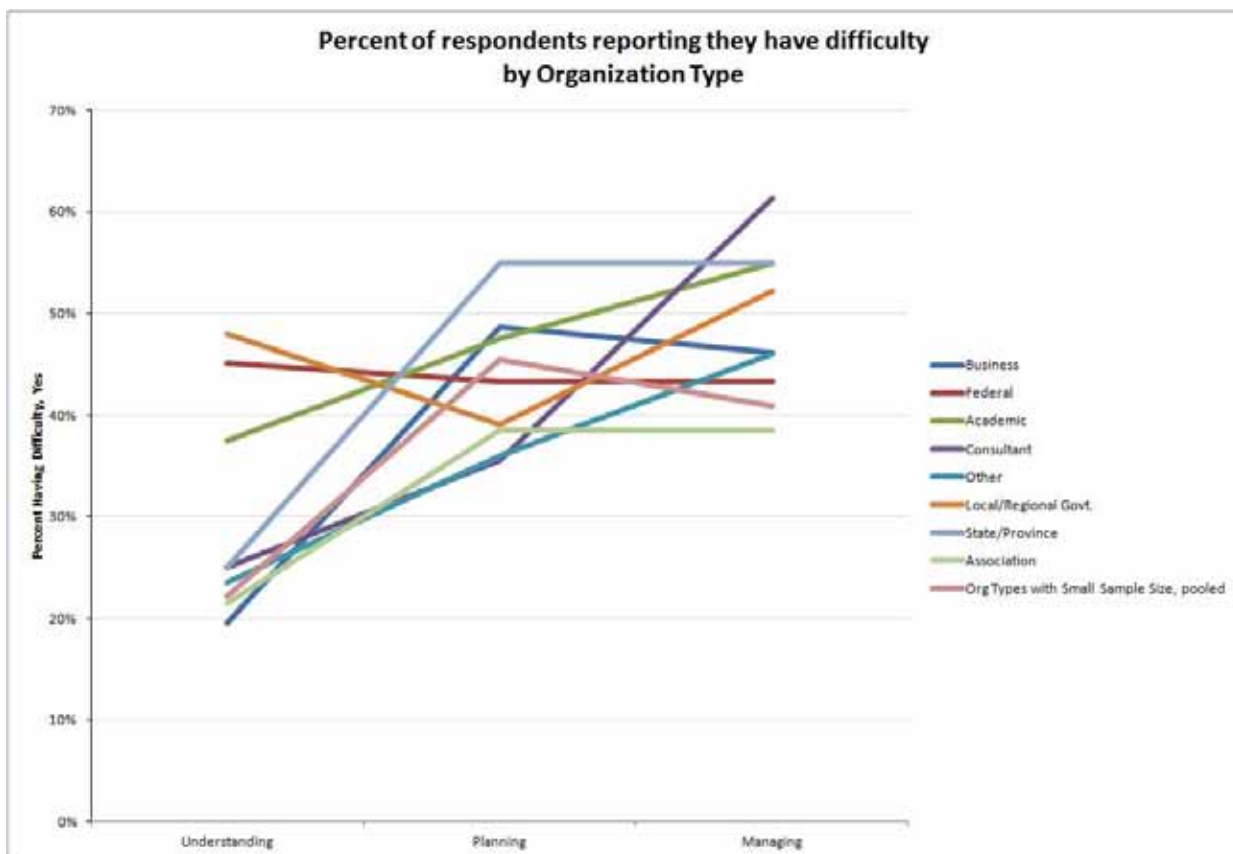
- **Understanding:** Before an organization can plan or manage climate impacts, it must understand the potential impacts it will face. Barriers in the understanding phase include the inability to detect the problem, gathering/using relevant information and defining the problem.
- **Planning:** After an organization understands the issues of climate impacts, it will plan to reduce and adapt as appropriate. Barriers faced in the planning phase include developing options (e.g., goals and criteria), assessing options (e.g. ROI and alternatives), and selecting options (e.g., commitment).
- **Managing:** This represents the most developed phase of adaptation planning. Barriers include implementing selected options, monitoring outcomes, and evaluating the effectiveness. At this level, planning for climate change has become mission critical.

The chart on page 13 is an overview of combined results. It represents the level of difficulty various sectors face over time. The three stages of adaptation planning are: understanding, which represents the early stages of implementation; planning, which is considered the intermediate stage; and managing, which is considered an advanced stage. These are the consolidated results of three sets of questions. Questions 11 and 12 relate to the understanding stage, 13 and 14 cover planning, and 15 and 16 cover managing.

In the far left column, we found that most sectors do not have difficulty understanding the impacts of climate change on their respective organization. With three exceptions, less than 25% of most sectors reported difficulties in the understanding phase. In other words, around 75% of the business, consultant, state governments, "other" (e.g., NGOs and non-profits), and associations reportedly understood the issues they face. On the other hand, again in the far left column of understanding, local (orange) and federal (red) governments, and academic (green) institutions reported 48%, 45%, and 38% respectively as having difficulties in this early stage of climate adaptation plan implementation.

<sup>3</sup> Moser, Susanne C.; Ekstrom, Julia A. "A framework to diagnose barriers to climate change adaptation" PNAS 2010 107: 22026-22031. Available for free download at <http://www.pnas.org/content/107/51/22026>.

The disparity between the two groups of sectors is most likely due to either, a lack of funds, lack of mission and/or leadership support, and in the case of the federal sector, the size of the organization (e.g., slow information processing).



As shown in the middle column, we found a substantial shift occur as organizations moved from the understanding phase to the planning stage. Here, nearly 50% of all sectors responded as having difficulties planning for the impacts of climate change. Note the light blue line representing local and regional governments. It shows the biggest jump, from about 25% having troubles understanding the impacts from climate change, to nearly 60% reporting difficulty actually planning for those impacts. Also of note is the red line representing the federal government, which shows the only sector moving slightly downward from 45% to 42%. Again, the reasons for these jumps are discussed in detail in the final report.

The far right column, managing, shows some stabilization. It also shows some significant trends. The purple line represents consultants and over 60% reported having difficulty managing climate plans. Local and regional governments (light blue) leveled off in this stage, yet 55% reported having difficulty planning for impacts. This high percentage highlights a problem in that local governments are the long-term planners and first responders to any impacts on land-use and private property. If local governments have difficulties planning for impacts, then opportunities arise for the private sector to support those efforts. Alternatively, some may interpret that this finding highlights a need for more federal intervention.

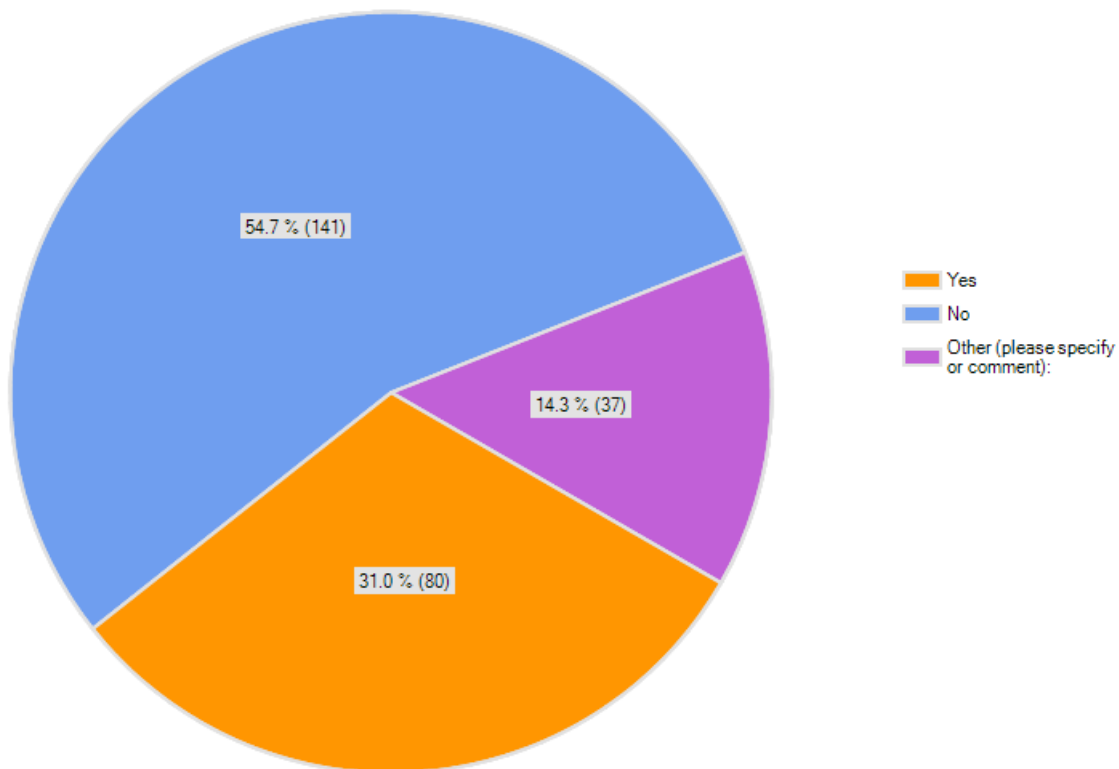
The general trend shows that organizations face increasingly more barriers as they progress through the understanding, planning, and managing phases. For purposes of this report, the next section breaks out the understanding phases in more detail.

### Question 11. Does your organization have difficulty understanding climate change adaptation?

Of the 258 respondents, 54% indicated that their organization does not have difficulty understanding climate adaptation. Since the respondents were from many different sectors, this finding suggests organizations are advancing climate implementation at a fast pace. Only 31% affirmed they were having difficulty understanding adaptation. The remaining 14 % (37 responses) responded as "other."

This question allowed respondents to provide a comment. Of the 258 respondents, 37 chose to leave a written comment. Overall, the comments suggest organizations do not fully understand the issues, which, if pooled, would slightly increase the percentage of those responding "yes."

**Barriers to understanding** Does your organization have difficulty understanding climate change adaptation? Examples include inability to detect a problem that exists, failure to acquire information on the necessary topics, and difficulty defining the problem.





**Question 12. Please give an example of barriers to understanding within your organization, if possible:**

Question 12 was an open ended question, which allowed respondents to expand upon the previous question regarding barriers to understanding. There were some 122 written responses, and the overall theme was a lack of staffing, training, and funding for experts. Here are some unedited, anonymous highlights, which seem to be consistent throughout:

“Lack of technical knowhow and training staff personnel.”

“Lack of skilled manpower trained specifically in climate and related issue and this reduces the quality in teaching, research and outreach programs of the university.”

“Lack of local level modeling on changes to temperature and rainfall.”

“Do not have the technical expertise employed within the Township.”

“Lack of understanding of science and climate change impacts due to distortion or inadequate information in the public/media.”

“The focus is on “staying alive” as a business.”

“Lack of data to demonstrate a clear health and safety case.”

“Lack of accurate weather data and information: This affects our ability to determine the best responses to changes in climate.”

“Key barrier is lack of certainty around the future climate scenarios and therefore difficulty of planning for future.”

“No barrier in my organization because we have specialist in this domain.”

“DoD is, perhaps, the world’s largest bureaucracy. Getting the word out and ensuring common understanding is, at the very least, problematic.”

“Not everyone understands how cc impacts their particular job area, i.e. fisheries staff may not be aware of climate projections.”

### Question 13. Does your organization have difficulty planning for climate change adaptation?

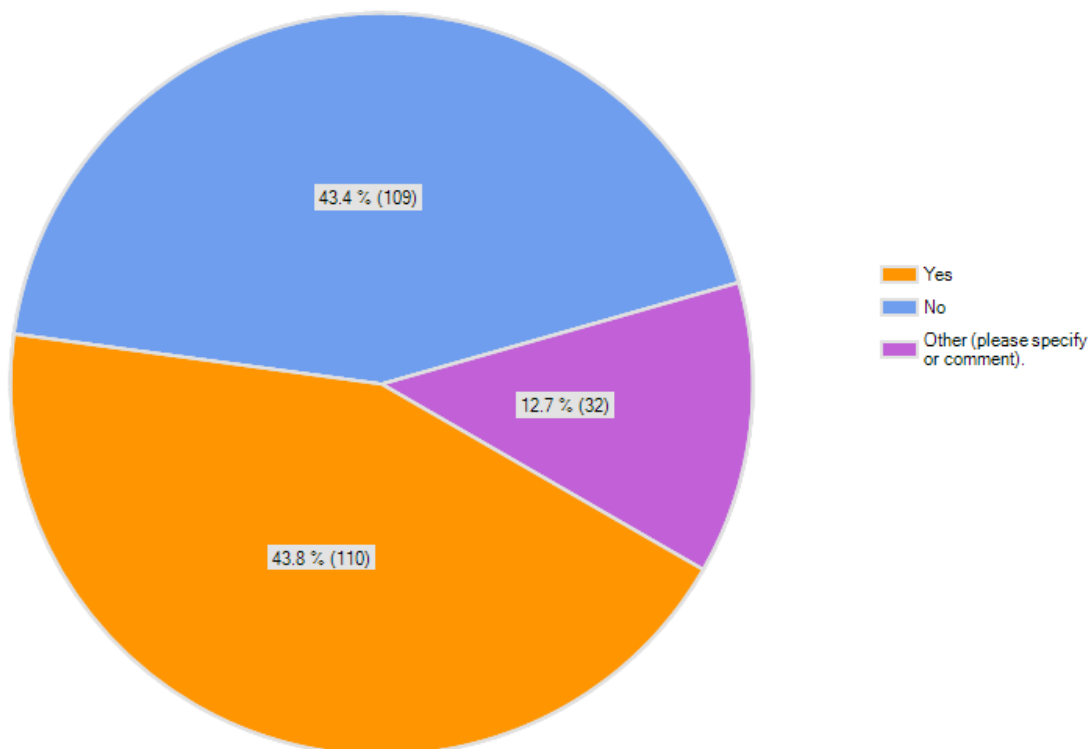
Planning is considered the second stage in implementation. It is at this stage that organizations commit to reducing risks from potential impacts from climate change. Planning is more difficult to conduct because there are so few time and field tested plans in existence. Thus, organizations are forced to take an ad hoc approach. As they do so, we attempted to measure the barriers they faced as they proceeded in this stage.

There were 251 responses to this question with a near even split between yes and no responses. About 43% replied that their organization does not have difficulty planning climate adaptation. Conversely, 43% percent affirmed they faced difficulties. The remaining 13 % responded “other.” As with question 11, respondents actively commented.

As shown in the overview chart in the beginning of this section, we can see a degradation of confidence from the understanding phase (54%) to the planning phase (43%). Though a downward trend, it still shows there are a high percentage of managers across sectors planning for climate change.

This is a positive result. We believe that, perhaps quantified for the first time, this indicates a significant upward trend in field of adaptation planning. From here, one can extrapolate that there will be a high demand for adaptation information and technical expertise including best practices, case studies, ROI analysis, and general educational materials.

**Barriers to planning** Does your organization have difficulty planning for climate change adaptation? Examples include a lack of consensus in defining adaptation goals, varying levels of concern for climate change impacts, and/or lack of commitment to adaptation issues from leadership.



## Question 14. Please give an example of barriers to planning within your organization, if possible:

Question 14 was an open ended question. We asked for examples of barriers that decision makers faced in the planning phases. The comments highlight the Dr. Jekyll and Mr. Hyde nature findings from question 13. While 43% stated they did not face significant barriers to planning, the other 43% of respondents stated that they do in fact face many challenges. The remaining 13% responded “other,” and the comments tease out the reasons for this otherwise balanced result. There were 120 written responses, most of which focused on the fact that their respective organizations had not yet reached the planning stages. Some indicated that they had a mandate to adapt, but still had not attempted to plan. Others indicated that there were competing priorities within their organizations. Here are some highlights:

“This is not relevant as we are just entering the planning period.”

“Has not attempted.”

“Adaptation compliance deliverables associated with EO 13514 are new.”

“Yes and No. No in that we were successful in building consensus and identifying goals. Yes it that priority for implementation is difficult. And I would say that lack of leadership for both mitigation and adaptation is an on-going issue.”

“Lack of proper financing!”

“Lack of information.”

“Have not yet specific climate change (plan) since the literal focus is on sustainability, time restraints and the economy makes it difficult--competing demands on time.”

“(We are) consulting to orgs who are in the process of doing this. Some have extreme difficulty and are not planning, others are moving forward.”

“Not even on current “radar screen.””

“Internally and operationally we are moving in the right direction but we are challenged when it comes to getting cost recovery for customer programs - e.g. on energy efficiency.”

## Information

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**T**he full analysis is available directly from ACCO. For more information, contact Daniel Kreeger, Executive Director of ACCO at [dkreeger@ACCOonline.org](mailto:dkreeger@ACCOonline.org), or Michael Cote, Program Manager at [mcote@ACCOonline.org](mailto:mcote@ACCOonline.org).

