CITYAGE DIGITAL ROUNDTABLE

DATA TO DRIVE CLIMATE ACTION (QUEBEC & ATLANTIC CANADA)

JUNE 22, 2021 | 10:00 - 11:30 AM ET

Held in partnership with Google Canada and Climate Engine

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BACKGROUND:

Quebec and Atlantic Canada are leaders in responsible natural resource development and climate action in Canada. Forging a low carbon future will rely on the use of AI, cloud and data technologies.

On June 22, CityAge brought together an expert group of public and private sector leaders from Quebec and Atlantic Canada to discuss how cloud technologies can best support decision making to take action on climate change.

ABOUT THE TOPIC:

AI, cloud and data technologies can provide climate and earth data to help governments make decisions related to drought, water use, agriculture, wildfire and city planning. We need to create partnerships between government and industry so that geospatial and other sources of data can be shared and used effectively, and we need to communicate about what we find so the public is aware of it.

If we want Quebec and Atlantic Canada to play key roles in the emerging carbon economy and provide solutions to the climate crisis, we will need to make full use of the tools at our disposal, including AI, cloud and data technologies. They can help predict and mitigate disasters, predict snowpack and water management issues, and anticipate, prevent and manage forest fires, floods and droughts.

> "The public sector's ability to respond to these threats is going to become more and more dependent on these large-scale geospatial insights. That's because the rate of change is going to be happening so fast, and it's going to be happening across so many different sectors, that we really need this data to keep up with what these changes are and understand what they are. We need to start doing the analysis of what the downstream impacts are going to be in a much more real-time way so that we can manage these chaotic events."

PANELISTS INCLUDED:

SUSAN SQUIRES

Assistant Deputy Minister, Climate Change, Government of Newfoundland and Labrador

JASON HOLLETT

Assistant Deputy Minister, Department of Environment and Climate Change, Government of Nova Scotia

SIDNEY RIBAUX

Director, Office of Ecological Transition and Resilience, City of Montreal

AMIR ALI KHAN

Manager Water Rights, Investigations, and Modelling Section, Water Resources Management Division, Department of Environment and Climate Change, Government of Newfoundland and Labrador

SHANNON MIEDEMA

Program Manager, Energy & Environment, Halifax Regional Municipality

ELAINE AUCOIN

Director of Environmental Planning and Management, City of Moncton

PETER NISHIMURA

Senior Climate Change Adaptation Policy Advisor, Government of Prince Edward Island

SUSANNA FULLER

Member, Halifax Environment and Sustainable Prosperity

MARC ANDREW

CEO & Co-Founder, CityAge

MIRO CERNETIG

President & Co-Founder, CityAge

FRANCO AMALFI

Strategic Business Executive, Public Sector, Google Cloud Canada

JAMIE HERRING

CEO, Climate Engine

PARTICIPANTS' KEY CONCLUSIONS:

Data is important for decision-makers, but how we present it can be just as important as the content, as well as how it's used over time. So we must collect it and make sure it's consistent, robust and defensible, because there's a level of risk that's associated with government decision-makers that needs to be at the forefront of all of this.

You collect the data, you understand what you need to do, but then there's the politics and the business interests, and by the time you get to the action that you're trying to take in terms of making all the policy and land-use changes for updating the one in five, the one in 20, the once-in 100-year flood zones, your information is now dated and being challenged and you're being asked to update it.

We could change behaviour even more strongly if people are able to ask, what is the impact on my household? We've seen more of that in recent years with folks who have coastal erosion concerns, but for everyone else who isn't fully appreciating how warm their evenings are going to get, how do we package this data so they really understand what might happen to them?

We always really struggle about looking at the holistic big picture around costs. How do you value natural assets? How do you value damage from a hurricane? How do you value a lost life? Let's talk about it differently.

We're looking at capital investments that actually save money over time. All of our energy efficiency work, all of our resilience, all of our work on electric vehicles, that's all ultimately going to be saving us dollars.

Increasing costs to carbon is actually not that hard to understand if it's repeatedly communicated in the right way. We have to be more patient sometimes in our returns on investment. It's not always a three-year payback or a six-month payback. Our big question is how do we get that initial capital investment now, understanding that we're going to win from it in the end? How do we do it as a city? How do we get our partners to do it? And that's when council is asked to put their money where their mouths are, and that's kind of where it becomes difficult, and staff is supposed to be going back to the budget committee with options on green taxes or increasing debt numbers. How do we leverage private investment with public dollars and all those types of companies?

PERSPECTIVES AND INSIGHTS

FROM THE TRANSCRIPT

1. HOW ARE YOU USING CLIMATE AND EARTH OBSERVATIONAL DATA TO ENLIST GOVERNMENT SUPPORT RELATED TO DROUGHT, WATER USE, AGRICULTURE, WILDFIRES AND CITY PLANNING?

Climate data is the foundation for many policy programs in most of the Atlantic provinces, but sometimes the problem is getting real-time information.

Data underpins all the work we do here in Nova Scotia on climate change, both on the mitigation and the adaptation side. So it's the foundation for policy programs, regulation legislation that we put together and decisions that formulate across that. And I think increasingly it's becoming more important in how we communicate with Nova Scotians on the decisions that we're making in helping to get their buy-in on action on climate change.

We have access to data for the mitigation, the adaptation, and our inventories. In Quebec, the problem is data that comes to us in real time, so that we don't have a lapse of five or 10 years between the data that's gathered and the analysis that's done of it or the access that we have to it. What's the efficiency of us gathering data at the municipal level, when provincial governments are gathering data, federal governments are gathering data and we're all doing all the work all over again? I think there's a huge loss in efficiency there.

We have a tidal river running through the city of Moncton. We also have access to water level data information and land elevation, because we base a lot of our bylaws and policies on minimum habitable space requirements for new buildings and things like that. So it helps to have data around land and water-level elevations for mapping, for our bylaws and policy.

Our primary use case in Newfoundland and Labrador is flood risk mapping. Since 2003, we've been mapping out all climate change flood zones based on precipitation projections, and we've also included sea level rise in those climate change flood risk mapping studies. We provide this kind of information to municipalities to help them prioritize which structures need to be updated, and to what capacity. We've taken those same studies and turned them into real-time flood forecasting systems. Climate data goes into these models in real time every day.

In Newfoundland and Labrador, most of our weather systems come from the south, and there is very little weather monitoring in the south. So what happens is any weather that's coming from the south that is passing New Brunswick, Nova Scotia, coming to Newfoundland, the data is very sparse, and the data is sparse on climate change prediction. We're trying to coordinate with federal and other agencies where there's a data gap that's impacting the modelling work that's happening, which we use as an input.

2. HOW DO YOU SHAPE PARTNERSHIPS BETWEEN GOVERNMENT AND INDUSTRY WHEN IT COMES TO THE EFFECTIVE USE OF GEOSPATIAL DATA?

Drive a consistent, robust and defensible approach and use solid data.

If we're developing legislation, regulations, policies or programs that have implications to developers, companies, individuals and homeowners, we need to be sure that the data is as solid as possible. And that becomes even more difficult if we're talking about predictive data.

We want to efficiently get data to be able to make the important decisions at the city level that we need to make. In Halifax, since it's a port city with coastal risk, we're concerned about our critical infrastructure and figuring out how to do localized climate hazard mapping. We need to take the high level 'We know what's coming, we know what's hitting us' and take it down to a more localized level to actually be able to make decisions on really expensive infrastructure with the whole Build Back Better theme on building in resiliency.

Recently, we put out a website with Environment Canada called climatedata.ca, which is meant to be the federal government's easy-to-use portal for access to a whole wide range of climate projection data. The work that we're doing now through Climate Engine with Google is focused mostly on remote sensing and earth observation data as a mechanism to meet the climate challenge.

We have an active conversation with the private financial sector for innovative ways of investing in public infrastructure, including the Bank of Canada, which has all this money that it doesn't know what to do with. We're trying to figure out how we can go over the hurdles that we have as a public institution to leverage some of this private money. There certainly are pathways to getting there, but we haven't gotten over all of the hurdles to actually do that at this point.

We run a cap and trade program here in Nova Scotia where 27 of the largest submitters have to report to us on an annual basis. We issue permits. There's a whole financial system that's established behind that. So anything that we use in terms of data or information needs to be really robust. Governments tend to err on the side of being more conservative, especially in the beginning. We usually watch the trends that are happening, and can be late adopters, especially when we're looking at things that are definitely related to legislation and regulations.

3. HOW CAN WE BETTER COMMUNICATE POSITIVE, IN-DEPTH, LOCAL STORIES ABOUT USING DATA TO SOLVE CLIMATE CHANGE ISSUES?

Bring the issue down to the personal level, including personal health and how climate change will affect it. Don't be a doomsayer without the evidence to back up your predictions.

There's a consortium of researchers on climate based in Quebec, that works outside of Quebec, called Ouranos. Many of them are IPCC authors and they're working specifically on adaptation. They're our main source and our main partner from whom we're getting data on adaptation. One of their big challenges is communication.

We were involved with the New Brunswick government in a study looking at the health impacts of climate change. They were trying to gather lots of data on high-degree days, the freestyle cycles, things like that and how they impact different groups of the population. So we use the different data in many ways to plan for climate change adaptation.

It's really important to have accurate data, but often, we've found it just doesn't generate the response that we're expecting or hoping for, with the public or our target audience. So what then? Did we disseminate poorly? Do we have to find new ways to present it? For us, that's a real challenge.

Let's say we're working on guidelines for construction of coastal infrastructure. If we're telling people 'You can't do that,' we have to be very sure that there's a good reason or justification for not being able to do that because there's a high degree of chance that we will get challenged in the courts if we're making a decision that degrades value for somebody's property.

4. HAVE YOU SEEN MUCH UPTAKE OF DATA AMONG LAYMEN OR NONPROFIT ORGANIZATIONS, IN TERMS OF, FOR EXAMPLE, COMMUNITY-ORIENTED DATA AGGREGATION?

Public-facing visualization tools might help attract attention from non-government sources, which also need to be fully apprised of the risks to themselves and their members.

There are seven cities in Canada, Halifax included, where the feds gave us an endowment that has to be matched and it can be matched by private and public donation over 10 years. In Halifax, it's a $15 million endowment. It's being managed by Efficiency One, not by the city itself, but it's for scaling up mitigation activities in the city. You're taking risks and trying to fill gaps. That's another interesting area where maybe they're going to get creative on leveraging private dollars.

We're trying to figure out some type of dashboard and visualization tool that allows people to input information and extract information, as we try to annually report on our climate progress and garner public engagement and action. How do we get compelling for the public? Because really that's where it all starts in terms of political influence and where the dollars go and how the policies are set.

We've just finished a risk assessment process with a bunch of key economic sectors, like agriculture, forestry, mining, tourism, and one thing I've seen is that it's difficult for people to grasp the data, and really understand what it's going to mean to them, because sometimes we're talking about it and it's not all connected. You're either talking about precipitation in the silo or talking about heat, for example. You're talking to everyday people who are struggling to put all that together and say, 'Okay, what does that mean for me?'

We're trying to come up with a new, deep energy retrofit program for Halifax. We're hoping to hear any day that we've gotten some funding from the feds, from the Community Efficiency Financing Program, to look at options for a financial model, because the Solar City Program that we run, that's all loans coming straight out of the city and not using any type of third-party lender, but it's not sustainable at scale.

Atlantic Hub is one of the federal government hubs rotation for the Atlantic provinces. That's the type of tool people are looking for, but it's the first time the Atlantic provinces will be together in kind of an adaptation forum specifically to look at pushing the envelope on convincing people, to put their heads into where they need to go on to be ready for climate change impacts, but also really nailing down what are their particular impacts.

5. ARE THESE VISUALIZATION TOOLS AFFORDABLE? HOW DO YOU STRUCTURE AND PRESENT THE COST BENEFIT ANALYSIS TO THE TREASURY BOARD?

Some tools are free, but others are expensive. For governments, you have to create a big picture scenario and show how ignoring climate change will affect the region financially.

Sometimes the government's decision is dependent on its priorities and how you can structure the ask and the cost benefit of it. The Atlantic data hub in particular is an interesting one. The driver is the federal government, which wants to create regional data centres to disseminate and make data more accessible to the regions across Canada. One of the questions that came up as we were putting our business case together was 'Can you articulate the cost benefit analysis of this? Are we saving businesses money, or how are we helping municipalities and communities? How are we helping homeowners?' It was a really difficult question to answer, because it's a new and emerging type of field.

We all have to go at this in a serious way, because even if Newfoundland and Labrador became net zero tomorrow, we're still going to deal with the impacts of climate change from everyone else's emissions. The whole cost benefit analysis becomes kind of skewed. It's helpful sometimes in very concrete examples, but other times, the big climate change conversation just sort of envelops it. You almost don't need it to sell the argument.

According to a report by Swiss Re Institute, one of the biggest re-insurers in the world, if we don't do anything to mitigate climate change by 2050, about 18 percent of the global GDP will be lost. There's a portion of the study that is community-specific. Would that be something that would be valuable to present to your audiences for justifying these types of investments?

At the city level, in Quebec, we're very much focused on costs right now, and we're not looking very much at payback. We are putting in place a climate test for all our decisions at the city level. That might help to change that dynamic a little bit.

Some work that we're doing now is incorporating a wellbeing framework into the decision-making process. We'll see where it goes. But we need to think about these things in different ways. GDP projections --especially global GDP – are not going to change minds.