



CLIMATE CHANGE IMPACTS AND ADAPTATION IN NEWFOUNDLAND:

Exploring Regional
Issues and Options
Summary Report
2023 (year one)

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Introduction

As part of on-going efforts to both inform and learn from community members across the province, the Harris Centre – in partnership with *econext and CLIMAtlantic* – hosted a series of regional workshops in 2023 to discuss the impacts and adaptation opportunities associated with climate change in Newfoundland and Labrador.¹ These sessions built on Forecast NL, an 18-month initiative by the Harris Centre that brought together key stakeholders for a province-wide discussion on the question: How can NL create economic and social prosperity while mitigating and adapting to climate change?

The primary focus for the 2023 regional workshops was to:

- Provide an opportunity for community members and stakeholders from different NL regions and sectors to learn more about climate adaptation strategies potentially relevant to their region and the climate impacts they are experiencing.
- Hear directly from community members and stakeholders about experiences with climate change and how their communities/region have begun to consider or adopt adaptation strategies.
- Create a forum for community members to explore the needs and opportunities for adaptation strategies to enhance the resilience of their region, and to highlight the types of technical assistance or other supports needed in order to pursue these strategies.
- Generate useful information for local and provincial organizations to inform their planning and provision of technical assistance resources toward climate adaptation issues and strategies of highest interest, priority and need.

¹ The workshops summarized in this report all took place on the island of Newfoundland. After some initial inquiries were made regarding convening similar workshops and expanding these discussions to Labrador, it became apparent that a different timing and approach would be needed. The partners remain interested in pursuing this opportunity in future phases of this effort.

Workshop Overview

During the spring and fall of 2023, the Harris Centre hosted six workshops in the following communities:

- Grand Falls-Windsor
- Port aux Basques
- Port Rexton/Trinity East
- Codroy Valley
- Bonavista
- Pasadena

A total of 78 people registered for the series, with individual workshops numbering five to 16 participants.

During the workshop registration process, participants were invited to select up to five topics from a pre-determined list² to indicate what they believed were most relevant and important for their region. In some workshops, participants chose to work with the topics receiving the greatest number of votes. In other workshops, participants chose to group together similar topics from among those receiving the greater number of votes.

After short presentations on Forecast NL, CLIMAtlantic, and related technical assistance tools and resources, workshop participants were invited to describe key regional climate change issues and concerns through group discussions, highlighting what is already being done in their communities related to climate change and identifying what could be done to effectively adapt to the impacts of climate change in their region.

Given the different contexts and experiences with climate change impacts in each community, each discussion proceeded differently. Rather than keep to a preset agenda, workshop facilitators supported participants taking conversations in the direction they felt most relevant to their needs and interests within two broader categories:

² The list was informed by topics that arose over the course of the Forecast NL project as identified by the project's Citizen's Forum.

1. *What is the general context for the discussion around climate adaptation in their community/region?*
 - a. *What has been the experience with climate-related impacts?*
 - b. *What is already happening around climate adaptation in their community/region?*

2. *What types of climate adaptation strategies and approaches are of greatest interest to them?*
 - a. *What do they see as the most significant needs or opportunities for climate adaptation in their community/region?*
 - b. *What are they interested in learning more about?*

The following section, *What We Heard*, provides a summary of the combined comments and emerging themes from the six workshops.

At the close of each workshop, participants were asked these two questions:

- *What climate adaptation strategies, resources or related topics would you like to learn more about?*
- *What's missing? Is there any specific information you believe is critical for your community/region to make progress on climate adaptation planning and actions?*

These responses can be found in Appendices B and C at the end of the report.

What We Heard – Themes and Observations

A. Issues of Greatest Relevance and Importance

The following table shows topics selected by registrants across all six workshops as the most relevant and important for their region.

(See Appendix A for a list of selected topics for each individual workshop.)

“Top” Issues	Number of Workshops
Frequency and severity of flooding	5
Impact on infrastructure (roads, bridges, power lines, wharfs, etc.)	5
Preparedness for higher intensity and frequency of storms	5
Lack of motivation and support for individual, household, and community change	4
Increased coastal erosion	3
Public awareness and understanding of climate change	3
Impacts on food security	2
Agriculture and food production	1
Frequency and severity of droughts	1
Impacts on freshwater systems (e.g., streams, wetlands, etc.)	1
Increased prevalence of forest fires	1
Waste management	1

Observations

There appears to be a fairly consistent set of issues related to climate change identified across the different communities. While each had its own specific concerns and associated adaptation strategies, the top issues seem to fall into two types of clusters:

- Increasing impacts from storms:
 - Frequency and severity of flooding
 - Impact on infrastructure (roads, bridges, power lines, wharfs, etc.)
 - Preparedness for higher intensity and frequency of storms
 - Increased coastal erosion
- Public awareness, understanding and support for making necessary changes:
 - Lack of motivation and support for individual, household, and community change
 - Public awareness and understanding of climate change

The remaining issues may speak to the unique local circumstances and experiences of each community/region; eg. droughts and forest fires were identified by participants in only one workshop (Grand Falls-Windsor) which is not surprising given the recent experience with wildfires in the Exploits region.

Potential implications for those seeking to target climate adaptation resources:

- From this relatively limited sample, there does appear to be an emerging “core set” of climate issues that could serve as the starting point for future climate adaptation discussions, planning and technical assistance.
- Understanding the specific experiences and contexts of different regions will help both stakeholders in those regions and outside organizations to better understand how people in the region perceive climate impacts (e.g., are food security concerns tied to potential disruptions to transportation systems or to the impacts of changing weather patterns on local food production) and appropriately tailor different types of adaptation strategies.

B. Context – What’s happening? Concerns/Impacts?

At each workshop, we invited participants to share the ways in which their community/region had already begun to experience impacts of climate change, what some of their biggest concerns are regarding current and future impacts and what types of “climate adaptation actions” (if any) are already happening in their region. The following is a summary of responses organized by themes that emerged across the six workshops.

The first set of concerns (“Prominent”) are topics that were part of discussions in three or more workshops. For these, we have also included a few illustrative participant responses/remarks. The second set of themes included below are additional topics that generated significant discussion in one or two workshops.

The full list of workshop participant responses is available upon request as a separate PDF document.

Prominent Impacts and Concerns

1. Extreme weather (ie., higher intensity and frequency of storms, flooding, drought)

Many observed that our current infrastructure was not designed for nor is it adequate for the more intense storms we are experiencing. This is starting to have an impact on households, municipalities and businesses. Some places are making efforts and putting resources into adapting their infrastructure to accommodate greater storm events and flood risks. However, some workshop participants noted that smaller and more remote communities may not be getting the support they need to implement these upgrades.

- *Infrastructure is not yet available to handle the increased frequency and high intensity of winter storms, wind storms, flooding, etc.*
- *A lot of infrastructure stuff currently happening - bigger bridges, bigger culverts going in*
- *In 2018, Lark Harbour and York Harbour were cut off for days when the road and culvert washed out; we had to fight with [the province] to put in bigger culverts.*

It's not just that weather is becoming more extreme. The frequency, severity, and intensity of weather events seems to be getting harder to predict; this makes it more difficult to prepare in advance for extreme events. This has implications for how to budget as well as what types of emergency preparedness plans to have in place.

- *There is uncertainty around operations and there needs to be several contingency plans due to unpredictability – this impacts tourism providers, among others.*

Much of the concern and focus of extreme weather is on the flooding that households and communities are experiencing with more intense storms. However, some people have started to observe the flip side – more drought and impacts from lower water levels at certain times of year.

- *It has never been top-of mind in NL to talk about water supply because people assume it will always be there. However, NL has recently had a couple of very hot summers, we are seeing less water and dropping pond levels, etc.*
- *Lower water means no fish; this has economic impacts (e.g., rafting, fishing, tourism, etc.).*

2. Food security

Closely related to more occurrences of extreme weather in many different places, participants shared their concerns about the increasing impacts on the transportation systems and subsequent threat to food supply.

- *When roads washed out (along the TCH), food was hard to get.*
- *Increased frequency and intensity of storms could cause road washouts, cutting off access to essential services such as the transportation of food.*

Communities and regions have started to look at different responses to this. Some of the ideas being explored range from changing the food distribution system (e.g., regional food distribution centres), increasing focus within communities and region on food storage facilities, and developing options to increase local food production.

- *Food distribution in the province is a problem that exacerbates preparedness programs.*
- *We are looking for more storage places for food.*
- *Seeing increased community gardens and backyard gardens in the valley because of the increased cost of food; we might see more of this as climate change further increases cost.*

3. Communities and regions are witnessing significant coastal erosion from storm events

Coastal erosion is having a significant and tangible impact in many areas. While “hardscaping” (e.g., breakwaters, seawalls, etc.) is often an initial or default response, there is acknowledgement and some concern that this “solution” may also contribute to further problems in the future. But if not adding or upgrading seawalls or fences, then what? It is not clear what are the best or most effective responses.

- *Coastline is radically changing with every storm, even the small ones - it's going away. You can visibly see properties going into the ocean.*
- *Because these areas were newly protected by the sea fences people built on this area, but it is no longer safe from the impacts of climate change (without creating the seawalls years ago, people would have never lived there in the first place). After creating a market for land, the town is now faced with a dilemma – should it invest more money to protect these areas when it may not be a suitable area to live further in the future?*

4. Awareness, motivation and capacity to act on climate change

For some places, addressing climate change is still not a priority. If discussions and actions ARE taking place, the concern is that they are not proactive or long-term.

- *Climate change is not currently a priority in municipal planning; economic interests are being valued over the environment.*
- *Everything is reactive here; nothing is proactive.*

One response we heard is to explore ways to encourage local/town officials to take on a leadership role in promoting local responses. However, there are at least two challenges to this: (a) capacity – many communities simply do not have the staff and other resources necessary for this work, and (b) local officials often do not receive support from community members to implement planning or other long-term climate adaptation strategies.

- *There needs to be pressure on politicians to do something, but because people are not aware of the significance of climate change, people are not pushing for it. There is very little informed discussion on climate change and this leads to a lack of political action and concern.*
- *Towns aren't required to have a municipal plan and people are resistant to implement this and without these things there is no authority to implement changes.*
- *Human resources are a big challenge moving forward – there is often not enough staff for what already needs to be done; doing more things presents a problem.*

A second approach we heard came from those advocating for a collaborative or regional approach, but again participants identified a number of different barriers to communities successfully working together.

- *Lack of a regional approach – we're all on the river with similar risk but we haven't worked together in our region to develop an approach.*
- *Municipalities see themselves as separate; they are still going after the same resources and the same funding.*

Regardless of the approach taken, many identified that public awareness and community support for actions to proactively prepare for the impacts of climate change is a challenge. Some of this comes from lingering questions among some community members about how impactful climate change really will be for them and their community. An additional aspect is a strong belief among some community members in individual responsibility to prepare for challenges; essentially adapting to climate change should not involve more government or other related types of institutions and

mechanisms for making and enforcing collective decisions. There are limited opportunities or places where community members can come together to engage productively in community/regional conversations. Finally, it is not clear if there are groups or resources available to help promote and support regional discussions and collaboration.

- *Society is not past the question of whether climate change is real.*
- *There is a need to overcome apathy and make sure that people understand how climate change is relevant to their own lives – snow/ice, rain/winds, Indigenous knowledge, and local ecological knowledge.*
- *People have the idea that if they live in a small or rural town, they shouldn't be told what to do; people just want to do whatever they want, but this needs to change.*
- *People out here like their independence and would be worried about "government moving in".*
- *There is a lack of opportunity and ability to address these challenges. The inability to change mindset has also prevented the successful implementation of programs in some communities.*
- *Where are the gathering spots and businesses where they are having climate adaptation challenges and can share their stories and focus on community engagement?*
- *What groups are available to help initiate these ideas moving forward?*

At least a partial exception to this may be in those places that have had direct experiences with and impacts from climate-related events. In response, the community came together to support one another. And they now seem more inclined to continue to work together to be better prepared for future challenges.

- *Community togetherness was huge. Everyone helped everyone. It gives me goosebumps thinking about it.*
- *People are paying attention now in ways they haven't before; new openness to innovative approaches/solutions.*

5. Land use planning to protect sensitive areas is emerging but still weak

Some communities are expanding their land use planning and conservation efforts, but those efforts are far from universal and often lack support or strong enforcement. And regardless of other changes, a big part of the challenge is that people still want to live and build along waterways and the coast – areas likely to flood in the new weather regime. Our individual activities are contributing to the risk of erosion, flooding and property losses.

- *Big expansion of conservation efforts in the city of Corner Brook.*

- *Lacking regulations and policies for protecting wetlands; there is no day-to-day oversight/ no enforcement.*
- *People aspiring to live on waterfront – you're going have issues here.*

Other Impacts and Concerns

6. Anxiety and Mental Health

While the increased awareness of the reality of climate change and the potential severity of its impacts has served as a catalyst in some places for people coming together and looking at more proactive approaches for increasing community resilience, these same experiences and awareness have also caused greater anxiety and related mental health concerns among some community members. For many, their sense of connection to place is strong and plays a key role in their lives. Both the impacts of climate change and some adaptation strategies have begun to threaten that sense of connection and safety, particularly among more vulnerable populations (e.g., elderly). While attempts have been made to increase mental health services and supports for communities affected by severe climate-related disasters, some are concerned about the lingering effects this is having on people and their community.

7. Housing

Perhaps a somewhat underappreciated impact of climate impacts has been its contribution to already-emerging housing challenges in different communities. Towns have started to look for solutions, exploring options for converting existing structures to new housing and changing zoning and building codes to permit new “in-fill” development strategies (e.g., tiny homes). But responses are complicated by various factors such as the suitability of available land, limited workforce available both for housing construction and repair, and, at times, community opposition to new types and locations for housing.

8. The financial impacts of climate change on certain industries/sectors

While much of discussion about climate change impacts and adaptation are focused on communities and households, this also is impacting businesses and whole sectors of the NL economy. These financial and economic impacts on businesses are becoming both direct (e.g., having to shut down due to road closures; not enough water for fishing or rafting) and indirect (e.g., having to spend the time to

rewrite policies and prepare in other ways for cancellations). All of this is an added burden especially for small businesses that may contribute to closures.

C. Needs/Opportunities – Where and how can we start?

After identifying and discussing what they had seen and experienced regarding both the impacts from climate change and current efforts to adopt adaptation strategies, workshop participants were asked to identify the climate adaptation strategies they believed could have the greatest utility and impact for their region. As part of their discussions, they were also invited to identify what would be needed in order for these strategies to be effective and what they would like to learn more about.

This section summarizes responses to these questions and the associated workshop discussions. Unlike the previous section, all of the following themes were raised and discussed in one way or another across at least three of the six workshops.

For those groups and organizations seeking to support the efforts of communities/regions with their climate adaptation efforts, the following may provide a useful framework for considering where and how to focus.

Participant Comments:

Be prepared for climate change because it is coming whether we like it or not.

It's real. Up to this point it was somewhere else. Now we know.... We are in for it again one way or the other. It will come again for sure.

a. Increasing awareness and engagement

Given the significant comments and discussion around the challenges communities face regarding public awareness and support for climate adaptation (i.e., “awareness, motivation and capacity to act on climate change”), it is not surprising that increasing education, awareness and engagement among community members and leadership was one of the most common suggestions. Even when people are already aware of changes to weather, storms and other climate-related impacts, participants noted the need to move from awareness to action.

- *Best chance for success → Perception change among town leaders and the public to come on board with the changes that are necessary.*
- *Issues are known, but there needs to be a way to get people to react.*

There needs to be formal and informal community/regional conversations. What these will look like need to be tailored to local contexts and capacities; to be effective the community/region's context, interests and needs should be understood. Many noted that opportunities for ways of engaging and involving youth should be explored. Beyond that, participants offered ideas about ways to inform and engage more people (e.g., share the cost of potential impacts, provide local businesses with information to share, community events, etc.), but there were as many questions as suggestions.

- *We can host/support conversations between various groups, but need to meet people where they're at, use a different mindset, different language, etc.*
- *There is a need for a regional committee or community advocacy group that specifically focuses on climate adaptation in the region and ensures that residents get relevant and important information.*
- *There is an interest in targeting problems that already exist. Adaptation efforts within a specific area should be used as momentum to get the word out and show these efforts in action.*
- *Younger generation grew up with an internalized sense of anxiety about what is going to happen to the world and just how big the problem is. Giving them the concept of stewardship helps give them the sense they can change things.*

In addition, many noted that some people are less interested in talking and more interested in doing and seeing things happen; we can build greater awareness and engagement from tangible projects that have purposes and benefits beyond just climate adaptation.

- *Tap into desire to promote tourism in the area. Talks about an Eco Museum that would incorporate the history and heritage of the area, including QR codes all over the valley, see pictures and YouTube videos about what things have happened in those areas. Is there a way to include climate related things in this (e.g., pictures comparing the coastline from the past to what it looks like currently)?*
- *How does climate information get communicated to people in the town? There is a role that stories play that data itself can't. People need to see a picture of what will happen and how it will affect them. Is there an opportunity to physically demonstrate this in the town, and work with artistic communities to make this tangible for people?*

b. Be better prepared for the next time (emergency preparedness and response)

Especially in those places that have already experienced significant impact from climate-related events (e.g., storms, flooding, etc.), discussions are shifting from “what might we do” to “it will happen again, so how can we be more prepared for the next time.” This leads to an observation heard across most of the workshops – we need to get better with emergency preparedness planning and response.

- *Better emergency response; including preparedness.*
- *More emphasis on an emergency committee that has membership from other service organizations.*
- *Fire department is working on emergency preparedness / disaster recovery plan*

Some of the specific items needing further attention and improvement included preparations for power outages – especially the need for generators in case of flooding within homes and buildings, community warming centres, options for how to ensure access to food and supplies when roads are washed out, and improvements in the diversity of communication systems that can reach different audiences both before and during emergencies. Some observed the importance of simply knowing your neighbours. Although not typically part of “emergency preparedness planning”, building social connections can help knowing when and where people are who may need assistance.

- *What things can we do to reduce the impacts the next time the power goes out? Can we provide generators to certain houses that qualify?*
- *There is a lot of talk about warming stations and how to provide and improve those services. Maybe we need more than one in order to build redundancies and resilience.*
- *Transportation systems – need to be able to get food in, move people and supplies.*
- *There are a lot of residents without cell phones – what other ways can people stay informed? E.g., developing a community radio station as a way to get the information out quickly; “senior’s buddy system” so in case of events like this you would be the one to check in and notify your “buddy.”*
- *Knowing your neighbours before disasters hit; e.g., getting people out for cards, games, etc. at a safe space where people can be a part of their community.*

Finally, one significant challenge in some rural areas is the lack of any official “civic addresses” for households. This can make it more difficult for volunteers and other emergency personnel to locate people quickly.

- *Paramedics live in this area, but knowing an address is a significant challenge here, no house numbers, no official addresses.*

c. Build in equity considerations

An issue raised in many of the workshops related to emergency response, but also with much broader applications and implications, is the observation that more vulnerable people and communities will often suffer greater impacts and have fewer of the resources necessary for climate adaptation. Approaches to climate adaptation need to account for income levels and resources available – both for people and for communities. There are also demographic considerations with certain populations less likely to use and benefit from different types of strategies (e.g., using a text warning system in places where not everyone has cell phones or adequate cellular service).

- *Climate change impacts, and capacity issues always impact vulnerable populations first and hardest.*
- *Climate adaptation must include options for people and municipalities with lower income. Can't invest in these things when it is hard to feed your family.*
- *There are smaller communities in the region with less resources; due to a lack of support some of these communities are unable to successfully implement programs.*

While some responses to equity considerations can be strategy-specific (e.g., different ways of communicating with community residents during emergencies), suggestions were also made for broader, more systemic responses such as universal basic income and investments in public transportation systems. Perhaps equally important to the specific strategy options, it is important to include diverse voices and perspectives in community/regional climate adaptation discussions to ensure equitable application and benefit is considered.

- *Livelihood security/UBI - It allows people to focus on adaptation.*
- *Building connections, perspectives to make a more inclusive space.*

d. Longer-term (strategic) thinking and planning

Underlying many of the concerns and challenges identified in the workshops was the observation that communities/regions need to take a proactive approach to climate adaptation that includes a longer-term mindset. A point of emphasis was the importance

of being thoughtful about both what gets done and how we do it in order to build it better and not just quickly or cheaply.

- *Infrastructure needs are pressing → Try to build it better, not just to the way it was before.*
- *In the process of raising the government wharf three feet or so; 25 years from now you're going to have to raise it again, so we need to be looking at longer-term solutions.*

For some participants, this means looking at ways of planning and acting as a region. For others, whether at a regional or community level, there is a need to find better ways of bringing in the expertise and information needed for developing solutions, and having more informed community conversations to develop climate adaptation plans.

- *There needs to be more collaborative strategic planning. Develop a regional strategic action plan.*
- *We need to understand what others are doing and what we can adapt to our circumstances.*
- *Need partnerships with experts so we're developing better solutions instead of just throwing money at everything.*

e. Land use planning, conservation and nature-based solutions

One way in which longer-term thinking and planning can be applied is through land use planning efforts. The importance of land use planning and related tools for climate adaptation was noted by participants in a number of workshops. Some of the conversations focused generally on the need for controlling patterns of development to avoid future damages to homes built in areas likely more prone to flooding and erosion. There were also significant amounts of discussion around the need to protect wetlands and other natural areas that can serve as buffers and absorption for flood waters.

- *Land use planning - limiting locations of new development; higher density; providing public benefit.*
- *There should be no more development within a certain distance of streams and wetlands.*
- *More resilience in natural areas to absorb extreme weather events.*

While noting the need for greater protection of natural areas such as wetlands, some observed that it is not enough to simply develop plans for these areas. Also required are efforts to educate community members on why these areas are being protected and supporting behavior change.

- *Habitat protection and restoration is here. We need to figure out how to help people make behavioral changes.*

- *The difficult part of protecting wetlands is enforcement. The number of ATVs last year cutting big ruts into the wetlands last winter was significant and there was no enforcement in place to stop people from doing this.*

The wetland conversations were often part of broader discussions on “nature-based” climate adaptation strategies. This included not only protecting key natural areas, but also looking at coastal restoration and protection strategies rather than simply defaulting to hardscaping.

- *This often gets overlooked – engineering options are often the first things looked at. Nature-based solutions have co-benefits.*
- *Partnerships are possible here with the town, citizens, CCNL, and can invite kids from school, and community members to do some willow spiking and replanting native grasses with deep root systems to help mitigate erosion.*

f. Building local capacity

In order to effectively pursue planning or other climate adaptation strategies, workshop participants noted the importance of making various forms of resources, technical assistance and expertise available. In some cases, direct assistance is needed for specific tasks associated with developing or making changes to municipal plans, but there is also the need to build the capacity of communities and local organizations more broadly to support local and regional climate adaptation efforts. In the process of building local capacity, it was encouraged to look for ways to identify and support local assets that can continue to serve as on-going resources for the community.

- *Funding and technical assistance – especially for communities that don’t have the technical staff.*
- *There needs to be expert knowledge getting into communities to make the best plans needed – some could come from MNL doing work around asset management, for example.*
- *Can we have training for local experts (e.g., some people have reentered carpentry to learn how to rebuild houses, new training programs)?*

g. Cooperation, coordination and collaboration

There was widespread discussion that often too much responsibility and pressure is placed on one group (e.g., certain individuals or just municipalities). For effective climate adaptation planning and implementation, everyone has an important role to play. There is a need to find ways for greater cooperation, coordination and collaboration between communities and also between local and provincial bodies.

- *There is too much responsibility put on individuals. Everyone has to do their part.*
- *There is a lot of pressure on municipalities because the municipalities are one of the major actors. But municipalities are not the only infrastructure owners - how can we get other owners engaged in these conversations?*
- *More collaboration across all levels of governments, communications within departments, legislation – provincial government can make things happen.*

Regarding intergovernmental coordination, participants acknowledged it may not always be easy, but creating greater alignment between provincial and municipal efforts and rules, along with services and programs to support those efforts, is critical to make progress on climate adaptation.

- *Harmonizing provincial and municipal regulations is tough - departments should be interconnected but they are not. There is no accountability within the province or the municipality. We need to hold people accountable.*
- *Address the disconnect between programs and upkeep of programs. Need services in place to support rules.*

Discussions around collaboration between communities often led back to discussions around taking a stronger regional approach. This could mean communities and other groups in a region looking for ways to communicate and coordinate their activities more effectively. It could also mean looking at options for regional planning and governance. Any sort of regional approach will require support for connecting conversations among different actors in the region. Some workshop participants suggested we may need to find or develop this capacity within their region.

- *Regional coordination → Smaller communities can partner and pool resources together to access programs that would otherwise be unaffordable.*
- *Regional government – the only way to make things happen in small communities is regionalization and communities working together to figure these things out.*
- *How do you get others involved in these conversations? Everyone has their role. Who is responsible for bringing different groups together? Where is the capacity to act as the connector?*

Appendix A – Most Relevant and Important Issues

During the workshop registration online, participants were invited to select up to five topics from a pre-determined list to indicate the topics they felt were most relevant and important for their region.

In some workshops, participants chose to work with the four to five topics receiving the greatest number of votes. In other workshops, participants chose to group together similar topics from among those receiving the greater number of votes. Below are the results for each of the six workshops.

Bonavista:

- Increased coastal erosion
- Frequency and severity of flooding
- Impact on infrastructure (roads, bridges, power lines, wharfs, etc.)
- Impacts on freshwater systems (e.g., streams, wetlands, etc.)
- Lack of motivation and support for individual, household, and community change

Codroy Valley:

- Impact on infrastructure (roads, bridges, power lines, wharfs, etc.)
- Increased coastal erosion
- Preparedness for higher intensity and frequency of storms
- Frequency and severity of flooding

Grand Falls-Windsor:

- Higher intensity and frequency of storms and flooding (*combining Preparedness for higher intensity and frequency of storms with Frequency and severity of flooding*)
- Impacts on food production, agriculture, and food security (*combining Agriculture and food production with Impacts on food security*)
- Public awareness and motivation to act on climate change (*combining Public awareness and understanding of climate change with Lack of motivation and support for individual, household, and community change*)
- Increased frequency and severity of droughts and forest fires (*combining Increased prevalence of forest fires with Frequency and severity of droughts*)

Pasadena:

- Impact on infrastructure (roads, bridges, power lines, wharfs, etc.)

- Frequency and severity of flooding
- Preparedness for higher intensity and frequency of storms
- Public awareness and motivation to act on climate change (*combining Public awareness and understanding of climate change with Lack of motivation and support for individual, household, and community change*)

Port aux Basques:

- Increased coastal erosion
- Impact on infrastructure (roads, bridges, power lines, wharfs, etc.)
- Preparedness for higher intensity and frequency of storms
- Frequency and severity of flooding
- Public awareness and understanding of climate change

Port Rexton/Trinity East:

- Lack of motivation and support for individual, household, and community change
- Waste management
- Preparedness for higher intensity and frequency of storms
- Impact on infrastructure (roads, bridges, power lines, wharfs, etc.)
- Impacts on food security

Appendix B – “What else would you like to learn more about?”

- Climate adaptation strategies to deal with flooding
- Grants/funding to help businesses and communities go green
- More ways to be ecofriendly on a smaller scale (household, small businesses, etc.)
- Nature-based solutions for municipalities
- Reforestation
- Storm water drainage
- What are we actively doing, especially government, to ensure food security in our province?
- What can I do in my own home in terms of climate adaptation strategies? What are the most important things that I should encourage my fellow citizens, local governments, and provincial governments do?
- Climate adaptation strategies being implemented for rural NL
- Climate adaptation strategies related to hurricanes and forest fires
- Climate Adaptation Toolkit and more customized tools that are available on an individual basis
- Data on public attitudes on climate change and adaptation would be helpful in planning
- Financial impacts of climate change on communities through a research project
- Infrastructure standards
- Public engagement strategies already underway
- Resources and supports for creating a community foundation or group in the area
- Rising sea levels, erosion, sea temperatures
- Sea level rise and erosion
- What funding programs exist for climate adaptation?
- Coastal erosion and impact on infrastructure and education to public how do we proceed
- Laws and restoration along our coastal areas
- Does the province have a coastal zone management plan? What is the province’s role in land use management for towns, municipal, and local service districts?
- Restoration of current wetlands and streams in the municipality, as well as the creation of enforceable laws in regard to development and land use within stream and wetland buffers
- Funding opportunities
- Current areas of outreach, restoration or other activities that we can get involved with
- Effects of municipal liability and land-use planning on climate adaptation
- Municipal planning education for all community members
- Spheres of change – what are the practical, political and personal components of change management in advancing climate adaptation

- How does food insecurity connect to climate adaptation actions and movement
- More on Climatatlantic toolkit
- How to go about implementing adaptation from start to finish; i.e., identifying the problem, discovering a solution, investigating and securing funding, implementing the project
- Education – both immediate and long-term
- Reaching and educating both the older and younger ends of the community
- Funding opportunities for NGO/education-based climate adaptation projects
- Examples of local climate adaptation successes (case studies)
- How municipalities (or community groups) can take climate adaptation action when there is a lack of capacity (money, staff) – are there funding opportunities?
- How to educate local government on the importance of environmental concerns
- Resources for saving land
- Resources for building stronger houses and infrastructure
- Funding sources for redevelopment of recreational infrastructure
- Setting up a network of emergency providers in our area
- How to reduce energy and impact of waves
- What are other countries doing? What works?
- More in depth around preventing/protecting against coastal erosion
- Green energy alternatives that are applicable for a municipality or individuals
- Anticipating and protecting against rising sea water and coastal erosion
- How to disperse communication throughout the community
- Tiny housing
- Health/Physiological implications of climate change impacts
- Relationship between climate adaptation strategies and offshore wind development
- Learn from experiences in other places; actual examples of how people and communities have adapted
- Resources applicable for individuals and households
- Specific strategies to address issues such as coastal erosion
- Climate resiliency plans and equipment
- Off-grid electricity options during outages
- Building techniques and materials for wind, fire and rain protection
- Resilience to water/flood damage
- Improving food security (access and nutrition)

Appendix C – “What is critical for communities and regions to make progress on climate adaptation?”

- All organizations and groups need to be informed of our future climate needs affecting them and their children
- Concrete examples for businesses – ideas or suggestions
- How do we deal with the challenges of drought?
- Information about resources
- Involvement from the provincial government, and funding
- More direct solutions that can be quickly implemented
- “One-stop” shopping website for funding opportunities (federal, provincial, NGOs, etc.)
- Political leadership will follow the voting public – no climate leadership without the mandate to do so
- Public engagement workshops – it allows people a way to get together and to get the ball rolling
- The general will among the public is missing because of a lack of connection to the broader climate change conversation
- Access to risk assessment at individual and business level
- Awareness among local community
- Community members should be aware of upcoming changes due to climate change; an increased awareness is necessary to adapt to these changes
- More connections and work with municipalities
- Waste management and recycling programs are not good enough in the area
- Widespread distribution of information such as Vital Signs
- An organization to facilitate communication and coordinate activities among different groups in the region
- Public engagement
- Connecting business owners and others who may have personal capital to engage equally to other types of groups
- Social enterprise or philanthropic work at the small scale across regional level
- Funding, both for adaptation work and also research, education, etc.
- Infrastructure
- Public transportation
- Regional network of groups working on climate adaptation
- Information on financial resources for climate resilience
- Best actions/options for climate adaptation strategies outside of coastal concerns
- Create local committee to head up environmental concerns/work
- Communication about other initiatives happening elsewhere in the world
- Specific strategies for reduction of climate impacts

- Nothing will proceed without more funding; the region lacks the tax base to pay for solutions
- Taking the next steps as a community
- More meetings/public information sessions; more representation from more towns
- How to develop early warning systems in preparedness for climate change
- Local capacity building
- Be part of Municipalities NL Engage Council so they understand the importance of climate adaptation planning
- Better ways of engaging LSDs in the area.
- Helping seniors understanding
- Helping students to look ahead for good career decisions (get them involved)
- Education accessible to all parts/members of the community
- Consistent and persistent efforts
- Specific info on wastewater and water management
- Climate disaster recovery plan, resources, support and education