



CLIMATE CHANGE
ADAPTATION
PLANNING:
A NUNAVUT TOOLKIT



Acknowledgements

The Nunavut Toolkit was prepared for the Canadian Institute of Planners by Beate Bowron, President, Beate Bowron Etcetera, and Gary Davidson, President, The Davidson Group. The authors are also responsible for the photographs. Members of the Nunavut Climate Change Partnership provided input to the document and commented on a draft version. We would like to thank everyone for their insights and suggestions.

The authors also want to recognize Shane Azam of Shane Azam Enterprises for the document design.

This document or parts thereof may be reproduced for non-commercial purposes, as long as it is referenced appropriately.

March 2011

INTRODUCTION

What Is Climate Change

Climate change, sometimes referred to as global warming, is the long-term increase in average global temperatures. Climate change is causing changes to normal weather conditions such as higher local temperatures and more frequent and erratic extreme weather events. In the Arctic regions temperature increases are expected to be double the rate as in the rest of the world accompanied by a reduction in snowfall and an increase in rain.

In Nunavut climate change impacts are all too evident. The multi-year sea ice is diminishing and much later freeze-up is affecting wildlife and hunting practices. Thawing permafrost is destabilizing buildings and other infrastructure, and storms and rising sea levels are causing coastal erosion.

Nunavummiut can do little to mitigate climate change, that is reduce the local emissions of greenhouse gases, because of Nunavut's remoteness, its arctic landscape and dependence on supplies from "the south". Instead it must focus on adaptation measures to deal with negative climate change impacts and seize opportunities that may materialize.

The Nunavut Climate Change Partnership

The Nunavut Climate Change Partnership (NCCP) was formed in 2008. Entitled "Atuliqtuq: Action and Adaptation in Nunavut" the Partnership's three main themes are:

- To build capacity for climate change adaptation planning within the Government of Nunavut and communities
- To develop tools to collect, publish, share and communicate climate change adaptation knowledge across the communities of Nunavut and beyond
- To create scientific information that is regionally and locally targeted to help communities adapt to climate change and transfer this capability into Nunavut

The Partnership consists of four organizations: the Government of Nunavut (GN) (Departments of Environment and Community & Government Services); Canadian Institute of Planners (CIP); Natural Resources Canada (NRCan); and Indian and Northern Affairs Canada (INAC). INAC has provided the funding for the Partnership projects. One of the results of the Partnership is this Toolkit.

Purpose and Basis of the Toolkit

The purpose of the Toolkit is to help Nunavut communities to plan for climate change adaptation. The Toolkit will expedite adaptation planning efforts and will ensure that the approaches used to develop climate change adaptation plans are similar. The Toolkit is a cost-effective way for smaller communities to prepare a Climate Change Adaptation Plan (CCAP) under the guidance of a planner.



The Toolkit is based on lessons learned from completing community climate change adaptation plans in seven Nunavut communities: Clyde River and Hall Beach (2008); and Arviat; Cambridge Bay; Iqaluit; Kugluktuk; and Whale Cove (2010). These lessons and considerable input from the Nunavut Climate Change Partnership were instrumental in developing this Toolkit.

What Is a Community Climate Change Adaptation Plan

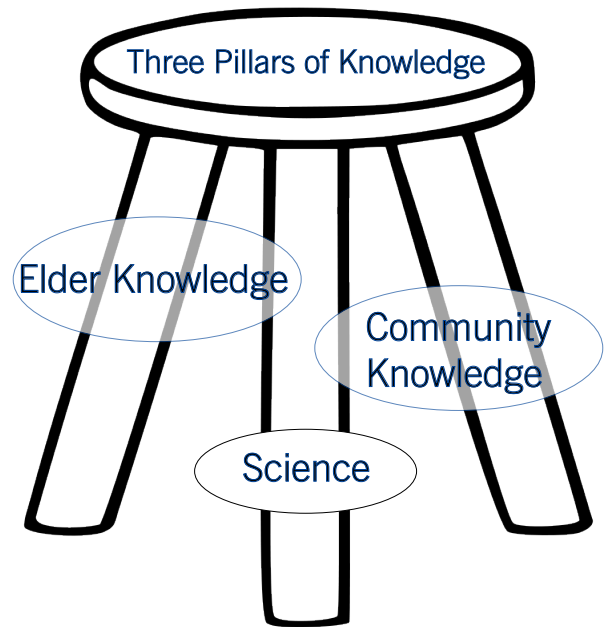
A Climate Change Adaptation Plan (CCAP) assists Nunavut communities to adapt to climate change. The plan describes climate change impacts affecting a community, assesses their relative risks and outlines possible opportunities climate change may create. It ranks these risks and opportunities in order of priority and makes recommendations for actions to be taken. A CCAP is a separate plan and can inform and feed into other types of plans such as community plans, emergency management plans, infrastructure budgets, etc.

Climate Change Adaptation Planning in Nunavut

Adaptation planning in Nunavut is based on three pillars of knowledge: Elder knowledge (Inuit Qaujimajatuqangit), science, and community knowledge.

These three types of knowledge are different from each other and must be integrated to achieve a balanced climate change adaptation plan.

Working in Nunavut means working in small and isolated communities and working with a translator during all community activities. Translation and cultural traditions establish the pace of the planning process. The seasons impose constraints on public involvement, since community members are out on the land and sea at different times of the year.



How Will the Toolkit Be Used

It is important that communities understand and endorse the adaptation planning process. However, the plan-making must be led by a planner. The Toolkit helps the planner develop a CCAP with the community. The planner may work in a consulting firm or for the Government of Nunavut's Department of Community & Government Services (CGS) or the Department of Environment (DoE). This Toolkit has been developed specifically for Nunavut, but it will also be useful for other northern Canadian communities.

Steps to Climate Change Adaptation in Nunavut

This Toolkit outlines a straightforward, easily understandable, 5-step process as show below in Diagram 1.

Diagram 1



How the Toolkit Is Organized

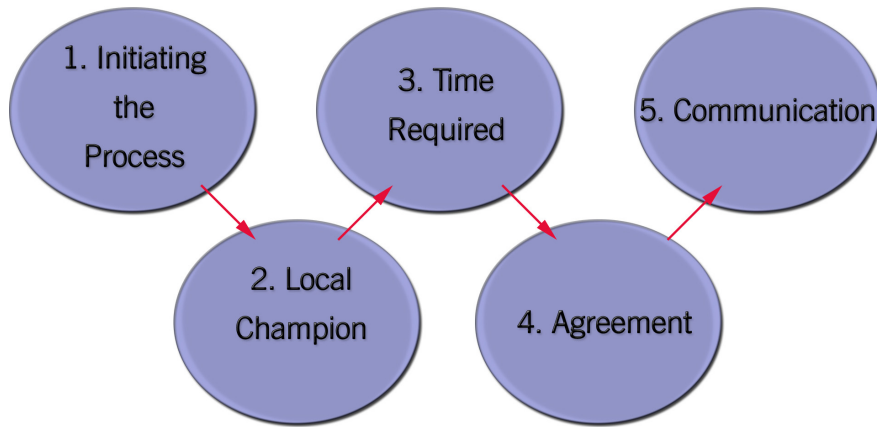
The Toolkit is organized around the five Steps to Climate Change Adaptation in Nunavut. Each step has a number of components, which outline the tasks to be completed in detail. Each component includes Sources where applicable, Techniques to be used for completing various tasks, a Checklist and Helpful Hints. In addition, the responsibility for each of the steps is assigned.

A section at the end of the Toolkit brings together summaries of the five Steps to Climate Change Adaptation in Nunavut, assigned responsibilities and an overview of the functions, events and estimated duration of each of the five community visits. A model hamlet council resolution agreeing to the CCAP process, a glossary of certain techniques and a glossary of acronyms are also included.

STEP ONE – GETTING STARTED

The five components of Step One are shown below in Diagram 2.

Diagram 2



If you don't start right, you won't finish!

Initiating the Process

The climate change adaptation planning process can be initiated either by a community or by the Government of Nunavut (GN). Either may initiate the process because of severe climate change impacts in a community that have to be dealt with or to determine which infrastructure improvements are most important. A CCAP may also be needed to feed into another type of planning process such as revisions to the existing community plan or to the community's emergency measures plan.

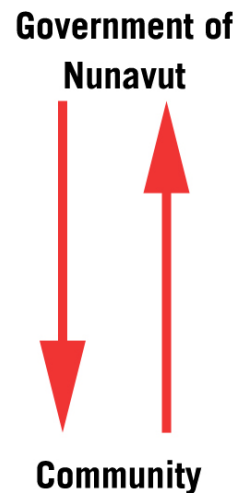
Local Champion

If the community initiates the climate change adaptation planning process, a local champion exists already. The local champion promotes the process to the GN and among community members. The local champion can be anyone who is well connected in the community, is concerned about climate change and has the time to be involved.

Examples include: an Elder; a councillor; the Senior Administrative Officer (SAO); the Planning and Lands Administrator (PLA); a member of the Hunters and Trappers Organization (HTO); or any community member.

Time Required

It is expected that a CCAP will be completed within 18 months. Five visits to the community are sufficient to accomplish the tasks outlined for each of the adaptation planning steps. The visits are multi-purpose and of different lengths. Some steps stretch over more than one visit. A summary of the functions and events during each of the five visits, as well as the estimated time of each, can be found at the end of the Toolkit.



Agreement

Both the hamlet council and the GN must formally commit to the CCAP process. Hamlet council will pass a resolution to develop a CCAP in their community and the GN will forward a Letter of Understanding confirming the timelines for the project and verifying that resources are available to complete the CCAP. A model resolution is included at the end of the Toolkit.

Once agreement has been reached to proceed with the CCAP, the planner who will develop the plan is confirmed. At this stage a local resource person is identified as well, who may or may not be the local champion and will most likely be the PLA. This resource person assists the planner with meeting logistics, notifications, finding an interpreter, etc.

Communication

Several Nunavut agencies and organizations need to be notified of the CCAP process to keep them informed and/or prepare them for possible cooperation. The existing Regional Community Planning Referral List can be used for this purpose. The Nunavut Planning Commission (NPC), other GN departments working in the community, Nunavut Tunngavik Incorporated (NTI), the regional Inuit associations, the Nunavut Impact Review Board (NIRB), other Institutes of Public Governance (IPGs) and the Nunavut General Monitoring Plan (NGMP) Secretariat in particular have to be notified.



After each community visit the planner will prepare a brief overview of activities completed. This report can be distributed to key community contacts as well as relevant GN departments and other agencies to keep everyone up-to-date.

Step One Checklist

- ✓ *Local champion*
- ✓ *Council resolution*
- ✓ *Planner*
- ✓ *Local resource person*
- ✓ *Notification (Agencies)*

Helpful Hints:



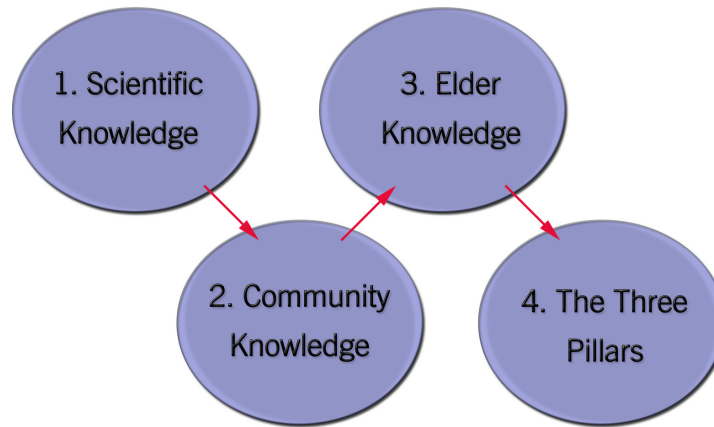
- *The Regional Planner, the PLA and the Hamlet SAO are excellent sources of local information*

STEP ONE RESPONSIBILITY: COMMUNITY AND GN

STEP TWO - BUILDING CLIMATE CHANGE KNOWLEDGE

The four components of Step Two are shown below in Diagram 3.

Diagram 3



All three types of knowledge depicted in Diagram 3 are required. Each type of knowledge is obtained through its own approach and must be available when the plan preparation commences. This ensures that each type of knowledge is balanced within the climate change adaptation plan.

Scientific Knowledge

Northern climate change planning often focuses on physical information such as; permafrost degradation, ice changes, sea level rise, etc. This type of knowledge is necessary but not sufficient. Also included in this knowledge category is a wide array of social science information. Together, both physical and social science compose this pillar of knowledge.

Developing the background knowledge input to the CCAP starts with looking at regional and local climate change scenarios. Scenarios provide high-level data on climate change elements such as temperature, precipitation, sea levels and wind patterns. From scenarios key local climate change impacts, both positive and negative, can be interpreted.

The information gathered from the scenarios can be supplemented and refined “on the ground”, if the planner and climate change scientists are in the community at the same time. Scientists will be able to point out physical impacts that may not be readily apparent.



General background information about the community completes this pillar. There are numerous reports on each community in Nunavut that provide background information, such as community plans and various GN wide strategies.

Sources:

Scenarios

- Environment Canada
- Canadian Climate Change Scenarios Network
- Ouranos

Impacts

- Centre for Indigenous Environmental Resources (CIER) Risk Assessment
- Natural Resources Canada
- CIP Climate Change Issues Report
- Department of Fisheries and Oceans (DFO)
- Arctic Climate Impact Assessment (ACIA)

Community

- Community & Government Services (CGS) for terrain analysis, community plans, constraint maps, etc.
- Department of Environment (DoE)
- Energy profiles
- Master drainage plans, if available
- Government of Nunavut (GN) sector plans such as economic development, airports, transportation, housing, emergency management, wellness and capital plans
- Nunavut Research Institute (NRI) reports
- ArcticNet reports

Techniques:

- Scenario building
- Impact interpretation
- Community profile
- Background research
- Report review
- “Walk-about” with scientists

Community Knowledge

Developing a community knowledge base is a major component of the adaptation planning process. This Toolkit stresses community knowledge and not just community input into the planning process. In Nunavut this can only be done from within the community and takes time. While scientific knowledge has a regional flavour, community knowledge is very specific to the hamlet.

The first task is to identify key community members that have an interest in climate change and are willing to participate. The objective is to find individuals within the hamlet that the planner can get information from, bounce ideas off, help engage the community and participate in developing the adaptation plan. There are several areas to look:

- Planning and Lands Administrator (PLA)
- Hamlet councillors
- HTO
- School teachers/students
- SAO
- Nunavut departmental personnel
- Any agency active in the hamlet

Each community will have its own constellation of involved community members. To identify these individuals a simple technique called “Key Informants” is useful. It involves asking people who they think are knowledgeable and would be interested. Once you have found one, ask for other names. Soon you will have several key individuals to act as a community sounding board. They can provide information on climate change issues, impacts, risks, opportunities and suggest possible actions. Later, when married with information from community meetings, this knowledge pillar will be complete.

It takes two visits to construct the community knowledge pillar. The first is to identify and discuss community climate change issues and planning with key individuals and to bring the project to the community at large. The second involves the entire community. This approach to gaining community knowledge ensures that it becomes one of the foundations of the adaptation plan. This time is well spent and pays off with an adaptation plan that has a strong base in community knowledge.

Climate change language can be very technical and a local interpreter may be unsure how to translate specific terms. In 2005 the Nunavut Department of Culture, Language, Elders and Youth (CLEY) and Nunavut Tunngavik Incorporated (NTI) published a “Terminology on Climate Change” which explains climate change concepts in English, Inuktitut and Inuinnaqtun. This booklet should be given to the local interpreter(s) for their use.

Sources:

- Key community members interested in climate change
- Hamlet staff
- Councillors
- Local organizations
- Community at large

Techniques:

- Key Informant process
- Public meetings
- Community feast
- One-on-one interviews
- “Walk-about” with public works staff
- Radio call-in show
- Climate change art contest in school





Elder Knowledge

In Nunavut Elders bring a special type of knowledge to the planning process referred to as Inuit Qaujimajatuqangit or IQ for short. It is a wisdom that comes from a life time of experience on the land and sea. This wisdom is vital to any understanding of climate change impacts in Nunavut.

The SAO can provide the names of Elders. There may be an Elders' group in the community and there may be one for both women and men. Visits can be arranged to talk to the Elders and listen to their stories over tea and bannock. The objective is to learn about the Elders' perceptions of climate change issues, build rapport and involve them in the planning process. The approach is to hold a series of informal, social discussions to arrive at Elder knowledge that will assist in preparing the climate change adaptation plan.

It takes at least two visits to assemble the Elder knowledge pillar. Gaining this knowledge requires patience and attention. The Toolkit establishes Elder knowledge as a key pillar of the information that is needed to undertake climate change adaptation planning.

Sources:

- All the Elders in the community

Techniques:

- Informal discussions over tea and bannock which is a traditional setting for discussion
- Brainstorming
- Story telling

"[The] weather is changing, ice conditions are thinner, it's getting dangerous to take the same route during spring, they have to adapt to the new type of traveling."
(Kugluktuk Elder)

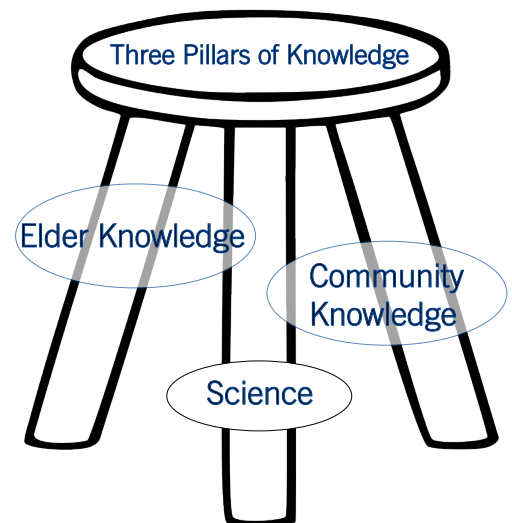
Elder knowledge is woven into their stories, be patient and listen

The Three Pillars

Step Two in the Toolkit is building the three knowledge pillars that are required to undertake a climate change adaptation plan in Nunavut. Each pillar is constructed separately and there is a different approach for each. This enables the knowledge from each pillar to be given equal weight. The various insights from each of the pillars form the collective knowledge for developing the adaptation plan for a community.

Each pillar, though different, is not at odds with the others. The planner needs to assemble knowledge from each pillar and construct an integrated whole to report to the community.

During the development of the three knowledge pillars gaps will become apparent. Plans are never prepared with complete information. The community needs to press on with the knowledge it has at the time. A CCAP is a living document. New information can be added through amendments and the Plan will be reviewed every five years so that new information can be incorporated.



Step Two Checklist

- ✓ *Community background information*
- ✓ *Climate change science*
- ✓ *Community scenarios and impacts*
- ✓ *List of key informants*
- ✓ *Summary of community knowledge*
- ✓ *List of Elders*
- ✓ *Summary of Elder knowledge*
- ✓ *Integration of the three pillars*

Helpful Hints:



- *Elder knowledge is precious to the Elder and must be compensated*

- *Have background information in place before community visits begin*

- *Scientists, the planner and community representatives should organize community "walk-about" at the first visit*

- *Door prizes bring people out to meetings*

- *Advertise meetings by poster and in the newspaper well in advance and by radio and Facebook the day before and the day of the meeting*

- *Give CLEY/NTI booklet on Climate Change Terminology to local interpreter(s)*

STEP TWO RESPONSIBILITY: THE PLANNER

STEP THREE – PREPARING THE PLAN

The six components of Step Three are shown below in Diagram 4.

Diagram 4



Climate Change Knowledge

During this component the climate change knowledge gathered during Step Two is shared at a community meeting. Elders, community members and scientists present their climate change knowledge and the planner outlines climate change impacts and opportunities, based on the integration of IQ, science and community knowledge.

The planner also holds separate meetings with Elders, key community members and community organizations to discuss the impacts and opportunities. This component is completed during Visit 3 to the community.

Techniques:

- Community meeting
- Presentations
- Discussions with individuals and groups

COMMUNITY MEETING

- ✓ Accessible location
- ✓ Community notice
- ✓ Radio advertising
- ✓ PowerPoint presentation

Priority Risks and Opportunities

Based on the integrated climate change knowledge the planner completes a simplified risk and opportunity assessment. Each risk is considered separately in a table that outlines the expected frequency of the risk, the extent of damage and the cost of adaptation. A straightforward assessment is used, as the perception of risk is somewhat subjective. For frequency the variables are: rare, sometimes and often. For extent of damage the variables are: low, moderate and high. For adaptation costs the variables are: low, moderate and high. Opportunities are ranked by economic impact (low, moderate, high) and ease of implementation (easy, moderate, difficult).

The planner then takes this assessment to a community workshop, where the risks and opportunities are ranked in order of priority. Workshop participants use a process called “Dotmocracy” to select their climate change priorities. This component is also completed during Visit 3 to the community.

Techniques:

- Risk and opportunity assessment
- Community workshop
- Dotmocracy

Action Planning

A further community workshop determines the adaptation actions that will be recommended to deal with priority risks and opportunities. During this workshop participants suggest who should be the lead agency or department in implementing a recommended action.

If an action can be taken by the community, workshop participants will take the action planning process further. They will specify which additional individuals or organizations should be involved, what information should be collected, what community resources are required and what can be accomplished within a certain timeframe. The action planning component is also completed during Visit 3 to the community.



Techniques:

- Community workshop
- Action planning

Draft CCAP

The planner is now in a position to prepare the Draft CCAP. While every community is different and may have a slightly different focus, a typical Draft CCAP has the following elements:

- Community profile which includes background information and climate change scenarios
- Analysis of climate change impacts, risks and opportunities
- Integration of priorities and recommended actions as well as recommended lead department or agency
- Summary table with 4 columns entitled: Risk/Opportunity; Adaptation Action; Priority; and Recommended Lead Agency or Department
- Action Plan for tasks to be accomplished by the community
- Appendix containing the brief overview reports for each community visit

A good example of a CCAP completed in 2010 is the Climate Change Adaptation Action Plan for the Hamlet of Arviat.

WORKSHOP

- ✓ Flip charts and paper
- ✓ Markers
- ✓ Coloured dots



Once the Draft CCAP has been completed, the planner has to collect feedback from as many community members and local groups as possible. A special attempt should be made to get feedback from local Elders. This will involve one or two community meetings. The Draft Plan will be presented to the hamlet council for comment. This is also the time to present the Draft CCAP to appropriate GN departments in the community and at their head offices in order to generate preliminary comments on recommended actions. Feedback on the Draft CCAP is collected during Visit 4 to the community.

Techniques:

- Community meeting
- Meetings with key community members
- Meeting with hamlet council
- Radio call-in show
- Meetings with appropriate GN departments in the community and at their head offices



Final CCAP

Preparing the final version of the CCAP is, again, the responsibility of the planner. Having listened to comments and concerns, the planner's professional judgement and experience will guide the revisions to be made. In the end, the planner has to be able to stand behind the plan.

During Visit 5 the planner presents the final CCAP to the community and to hamlet council.

Techniques:

- Community meeting
- Radio call-in show
- Hamlet council meeting



CIP Planning Teams 2009 - 2010

Distribution

Copies of the final CCAP will be distributed to the hamlet council, the departments and agencies recommended to lead the adaptation actions and other appropriate GN departments. The CCAP should be posted on the hamlet website, if one exists.

Since a lengthy planning document is expensive to produce in large numbers, the planner prepares a poster version of the final CCAP, which can be posted in community locations such as the hamlet office, the school(s), the supermarket, health centre, the HTO office, etc. This poster can also be reproduced as a flyer to be distributed to all households in the community. Like all of the materials used during the plan-making process, the final plan, poster and flyer have to be available in English and Inuktitut or Inuinnaqtun.

MATERIALS NEEDED

- ✓ CCAPs (30)
- ✓ Posters (10)
- ✓ Flyers (one flyer for each household)

Step Three Checklist

- ✓ *Climate change knowledge integrated*
- ✓ *Risk/opportunities assessment*
- ✓ *Priority ranking of risks and opportunities*
- ✓ *Action planning*
- ✓ *Draft CCAP*
- ✓ *Feedback on Draft CCAP*
- ✓ *Final CCAP*
- ✓ *Distribution*

Helpful Hints:



- *Don't underestimate the fun and power of Dotmocracy*
- *The summary table and action plan are the heart of the CCAP*
- *Recommended actions should be grouped by theme and responsible department or agency*
- *Spread the word! Send a flyer to all households*

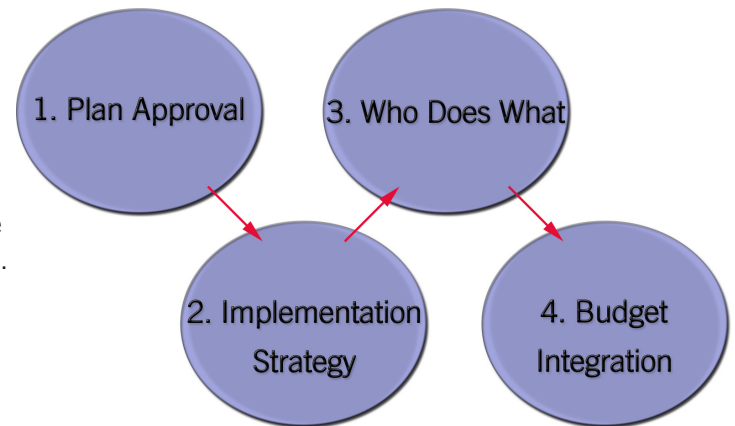
STEP THREE RESPONSIBILITY: THE PLANNER

STEP FOUR - APPROVING THE PLAN

The four components of Step Four are shown below in Diagram 5.

Diagram 5

Approving and then implementing the CCAP are difficult steps and must be given as much thought and consideration as gathering knowledge and preparing the plan. If a plan can't be implemented, it has no life and sits on a shelf. Nunavut presents a challenge in plan approval. The Nunavut municipal structure determines that any plan approval must be a joint effort between the community, the council and the Government of Nunavut.



Plan Approval

A climate change adaptation plan lays out a long-term vision, a road map for adapting to climate change.

Resources, both within the community and the GN, determine what can actually be accomplished and within what timeframe. The CCAP provides priorities and these must be harmonized with available resources and programs.

The CCAP is first adopted by hamlet council resolution. Different councils will have differing approaches to community notification, meetings and approval. The plan will have been widely circulated in Step Three. Formal approval indicates to the community that the hamlet council stands behind their Climate Change Adaptation Plan. This is the start, but just the start of the task of implementing the CCAP.

Implementation Strategy

Climate change has sweeping implications for communities and affects numerous departments and agencies. Following approval, a detailed implementation strategy and schedule needs to be prepared. This is a joint task for the hamlet and the GN. The hamlet would be represented by the SAO and/or the mayor. Representatives for the GN would vary depending on the priorities set out in the CCAP. A plan implementation team will be set up to consider:

- Hamlet climate change funding priorities set out in the CCAP
- What the community can do
- What the hamlet should be responsible for
- Role of the GN and its various departments
- Role of other agencies

Implementation of the CCAP will occur at several levels and over various timeframes. Not all implementation actions require new resources. The community can carry out some, others may be integrated into existing hamlet and GN programs. Many, however, will require coordination of existing programs and new resources, especially those involving infrastructure replacement or new construction.

Resources are limited in Nunavut. This is why an implementation team needs to be set up to determine what is feasible, what programs can be employed and what can be done from within the community itself.

The team will produce an implementation strategy, a projected budget and a time schedule for achieving the agreed upon actions. Once completed these will become an appendix to the CCAP.

Who Does What

The CCAP is developed as a “stand alone” plan. This allows sections of the CCAP to be implemented through various methods and feed into other plans and strategies.

One component of the implementation strategy is to assign responsibilities for the various actions. Climate change brings new challenges that lie outside current operations and mandates. The plan can lay these out, but all the players must sign on to do their part of the implementation strategy. Innovative thinking is required to determine “who does what and how”. At the end of the discussion on “who does what” a chart assigning roles and responsibilities is prepared and agreed to.

Budget Integration

Creating a realistic budget for carrying out various actions is critical to the success of the CCAP. Resources need to be built into the budgets of both the hamlet and GN departments and other agencies. This may require new funds or reassignment of funds. Budget integration is the hardest part of action; it is also the most crucial to the success of the plan.

Being proactive always costs less than reacting to a climate change emergency

Step Four Checklist

- ✓ Council resolution to approve CCAP
- ✓ Implementation team
- ✓ Implementation strategy
- ✓ Implementation timelines
- ✓ Who does what
- ✓ Budget integration

Helpful Hints:



- All communities are different in their climate change adaptation needs, so expect differing implementation strategies
- Set up the implementation team immediately after the CCAP is approved

STEP FOUR RESPONSIBILITY: HAMLET COUNCIL AND GN

STEP FIVE - MONITORING AND REVIEW

Monitoring rounds out the Toolkit's 5-step process to climate change adaptation in Nunavut communities. The four components of Step Five are shown below in Diagram 6.

Key Indicators

The work of laying out an implementation schedule, budget integration and responsibilities was accomplished in Step Four. These three aspects are the foundation for monitoring the CCAP. Vital to monitoring is the development of key indicators that specify the progress of the plan's implementation. For each implementation action indicators are developed that relate to the various steps that must be taken to ensure completion.

Since CCAPs will be different in each community so will the key indicators chosen. They reflect the stages in the completion of various implementation activities. In some communities it may be the progress of the completion of a piece of infrastructure, in others the development of a search and rescue program and in still others the protection of drinking water sources. Whichever the key indicator, it will relate to a priority action in the CCAP.

Milestones

Milestones refer to timing. Key indicators are planned to occur at certain times. The CCAP implementation strategy lays out timelines and milestones and lets the community assess if planned actions are occurring in a timely manner. While everyone can see when a piece of infrastructure is complete, there are numerous steps involved and monitoring milestones is an effective way to keep things on track.

Reporting

Some actions take considerable time. Indicators and milestones need to be reported. An annual report on the progress of implementing the CCAP helps the community know what's going on and lets people evaluate the success of the plan. The PLA, in consultation with the plan implementation team, should prepare this annual report.

Reviewing the Plan

Plans are dynamic and change should be expected. Gaps in original knowledge identified under the Three Pillars of Climate Change Knowledge will be filled and new information will become available. Climate change science is in flux and new information may require that some of the CCAP's impacts, risks and opportunities be revised. Implementation may move faster than expected.

The CCAP should be reviewed every five years to ensure it is up-to-date and that the implementation schedule is still relevant. This review would start with a community meeting to examine the annual progress reports and get input from scientists, Elders and community members. From this review meeting the status of the CCAP can be determined. Does it need a few minor adjustments or should a new CCAP be done. The review process should be led by the PLA in cooperation with CGS and the DoE.

Diagram 6



Step Five Checklist

- ✓ *Determine key indicators*
- ✓ *Indicate milestones*
- ✓ *Monitor timelines*

Helpful Hints:



- *Hamlets will have unique key indicators*



STEP FIVE RESPONSIBILITY: GN, HAMLET COUNCIL AND COMMUNITY

SUMMARIES

The Toolkit outlines the various components of the five Steps to Climate Change Adaptation in Nunavut. It also assigns responsibility for each step and describes the functions of the five visits to the community, the events that should take place during each visit and each visit's estimated duration.

This section of the Toolkit summarizes all of this information for easy reference.

Summary of Steps and Components

Detailed descriptions of the components of the five Steps to Climate Change Adaptation in Nunavut are provided in the Toolkit. The graph below summarizes the steps and their components.



Summary of Responsibilities

Throughout the Toolkit responsibility for completing each of the five Steps to Climate Change Adaptation in Nunavut has been assigned to one or more individuals or organizations. This information is summarized in the chart below.

STEP	GN	PLANNER	COMMUNITY	HAMLET
ONE	X		X	X
TWO		X		
THREE		X		
FOUR	X			X
FIVE	X		X	X

Summary of Visits

Throughout the Toolkit community visits are referenced in various components of the five Steps to Climate Change Adaptation in Nunavut. The functions of each of the five visits and the events that should take place, as well as the estimated time required for each, are summarized in the graph below. The five visits should take place during all seasons of the year and should be spaced to maintain the momentum of the adaptation planning process.

VISIT 1 (STEP TWO)

Function	Events	Time Required
<ul style="list-style-type: none"> • Identify key community members • Meet with key community members • Meet with SAO • Identify Elders • Meet with Elders • Develop rapport in community 	<ul style="list-style-type: none"> • Interviews with community members • Council meeting • Tea and bannock with Elders • Community walk-about with scientists • Community feast 	<ul style="list-style-type: none"> • Four days in the community

VISIT 2 (STEP TWO)

Function	Events	Time Required
<ul style="list-style-type: none"> • Continue gathering community knowledge • Continue gathering Elder knowledge • Engage community 	<ul style="list-style-type: none"> • Meetings with key informants • Tea and bannock with Elders • Community meeting 	<ul style="list-style-type: none"> • Four days in the community

VISIT 3 (STEP TWO)

Function	Events	Time Required
<ul style="list-style-type: none"> • Present climate change knowledge to community • Discussion of impacts, opportunities and risks • Prioritization • Action planning • Continue discussions with Elders 	<ul style="list-style-type: none"> • Community workshops • Informal discussions with Elders 	<ul style="list-style-type: none"> • Four days in the community

VISIT 4 (STEP TWO)

Function	Events	Time Required
<ul style="list-style-type: none"> • Present draft plan • Feedback on draft plan • Discuss draft plan with Elders 	<ul style="list-style-type: none"> • Community meeting • Meeting in school • Session with Elders • Meeting with key community members • Radio call-in show • Meetings with appropriate GN departments • Meeting with hamlet council 	<ul style="list-style-type: none"> • Four days in the community • Two days at departmental head offices

VISIT 5 (STEP TWO)

Function	Events	Time Required
<ul style="list-style-type: none"> • Present final plan • Discuss final plan with Elders • Present to hamlet council 	<ul style="list-style-type: none"> • Community meeting • Session with Elders • Council meeting • Radio call-in show 	<ul style="list-style-type: none"> • Three days in the community

MODEL HAMLET COUNCIL RESOLUTION

Moved by:

Seconded by:

Be it resolved that Hamlet Council agree to the development of a Community Climate Change Adaptation Plan in (name of hamlet).

GLOSSARY OF TECHNIQUES

The Toolkit suggests various techniques for accomplishing the tasks outlined in the 5-step adaptation planning process. Most are quite common and need no elaboration. However, some may not be so well known. A brief explanation of those is outlined in this Glossary. More detailed discussions of these techniques can be found in a variety of facilitators' handbooks. One useful handbook is: Sam Kaner, *Facilitator's Guide to Participatory Decision-Making*, New Society Publishers, Gabriola Island, BC, 1996.

Brainstorming

This technique is used to generate innovative ideas and involve all group members. It moves through three basic stages of idea generation, evaluation and selection. At the outset all ideas, no matter how "off-the-wall" they may seem, are accepted and recorded. No criticism is allowed at this stage. In the next stage ideas are evaluated and combined to produce a limited number of viable ideas. Finally, the viable ideas are ranked in priority order.

Dotmocracy

This technique is used to prioritize issues or actions and involve all group members. It is very useful in large groups or workshops. First, a list of issues or actions is compiled on flip chart paper and taped to the wall. Each participant is given a number of coloured sticky dots, usually ten. Participants "vote" by sticking their dots besides the ideas they like the best. In effect they vote with dots, hence dotmocracy. When the dots are added up a priority list of issues or actions has been created.

Key Indicators

This technique is used to assist in monitoring implementation of a plan or action. It sets out specific and measureable items that indicate progress towards completion. For example, in building a rink some indicators might be; plans finalized, contractor hired, foundation poured, walls erected, etc.

Key Informant Process

This technique is used to identify members of a community with specific types of knowledge that is valued by many. It starts by asking a few community members chosen at random who they would talk to, if they wanted to know about or seek advice on climate change. Certain names will be suggested by several people. These become the key informants. The initial key informants may also suggest further names.

Milestones

This technique is used to monitor the time required to implement recommended actions. For each of the key indicators a timeframe is estimated. The completion of a key indicator then becomes a milestone. What is monitored is whether or not the key indicator was completed on time.

Risk and Opportunity Assessment

This technique is used to evaluate priorities for action in adapting to climate change impacts. There are various approaches to risk and opportunity assessment and some are very detailed and technical. The Toolkit uses a simplified assessment process that can be employed at the community level. A straightforward three level ranking system is employed.

Impacts are ranked under the categories of expected **frequency** (classified as rare, sometimes and often), **extent of damage** (classified as low, moderate or high) and **adaptation cost** (classified as low, moderate or high). Impacts can then be prioritized based on an assessment of these three variables.

Opportunities are ranked under the categories of **economic impact** (classified as low, moderate and high) and **ease of implementation** (classified as easy, moderate or difficult). Opportunities can then be prioritized based on an assessment of these two variables.

Scenario Building

This technique is used to paint a picture of what the climate will be like in an area at various points in the future. Climate change scenarios usually work in longer timeframes, possibly 25, 50 and 100 years. General climate data on temperature, precipitation, wind and ice conditions are used in models to suggest future climate conditions. These future climate conditions for the community become the base information for determining impacts.



GLOSSARY OF ACRONYMS

ACIA	Arctic Climate Impact Assessment
CCAP	Community Climate Change Adaptation Plan
CGS	Community & Government Services Department
CIER	Centre for Indigenous Environmental Resources
CIP	Canadian Institute of Planners
CLEY	Department of Culture, Language, Elders and Youth
DFO	Department of Fisheries and Oceans
DoE	Department of Environment
GN	Government of Nunavut
HTO	Hunters and Trappers Organization
INAC	Indian and Northern Affairs Canada
IPG	Institute of Public Governance
IQ	Inuit Qaujimajatuqangit
NCCP	Nunavut Climate Change Partnership
NGMP	Nunavut General Monitoring Plan
NIRB	Nunavut Impact Review Board
NPC	Nunavut Planning Commission
NRCan	Natural Resources Canada
NTI	Nunavut Tunngavik Incorporated
PLA	Planning and Lands Administrator
SAO	Senior Administrative Officer