CLIMATE

Adapting to Change

International Best Practice Climate Adaptation Model

Collaborative | Learning | Initiative

Northern Periphery and Arctic Programme 2014–2020

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Investing in your future

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Table of Contents

Introduction

Climate Adaptation means increasing societal resilience to the challenges posed by climate change including extreme weather impacts. Early preventative actions are significantly more cost effective than disaster response efforts, so adaptation planning is an important financial step for organisations. This document offers a step-by-step guide with a set of tools to follow, whether you are new to adaptation planning or interested in planning in greater detail. You can also tailor what tools you use based on your specific legislative or resource context.

Who can use this Model?

The model has been developed so that it can be used either as a complete guide, or for guidance on the aspect of adaptation planning that suits your work. Previous experience with or knowledge about climate adaptation is not necessary. The model is mainly aimed at supporting the planning process on a local level, municipalities or councils but can of course be used by other organisations as well. This guide can support organisations through its very first experience of adaptation planning, or support adaptation in a variety of exisiting policy and organisational contexts. This will be defined by undertaking the situational analysis which will define which parts of the model you will need to use.

Overview of the Best Practice Model

FIG 1: An overview of the five main steps involved in the International Best Practice Model (IBPM) that can be used for local climate adaptation planning.

The International Best Practice Climate Adaptation Model (IBPM) outlines the climate adaptation planning process as developed by the **CLIMATE project**. The five iterative steps in the model have been designed with local authorities (municipalities or councils) with small and remote areas in northern Europe in mind but the process can also be applied on a regional or national level in other areas as well. If all the steps are followed, the final outcome from the model is a draft climate adaptation plan or strategy. The IBPM is compiled from the climate adaptation cycles from seven countries, Ireland, Scotland, Sweden, the United Kingdom, the United States, New Zealand and Australia. Each of these cycles have similar steps, but their implementation differs somewhat depending on the policy context of each region. For example, in Sweden there is a National Climate Strategy that includes two laws (2018) regarding built environments that each local authority needs to follow. Together with a regional coordination responsibility for local adapatation, this creates a situation with clear top-down regulation and solid drivers with which to gain buy-in from local politicians. In many other countries, where the top-down regulation is less clear, much more effort may be needed in the beginning of the process to get political anchoring for climate adaptation. The IBPM cycle consists of five key steps which which are relevant across all jurisdictions of the Northern Periphery and Arctic region, as well as further afield.

The IBPM's aim is to provide a tool that is useful for any local or regional authority in the Northern Periphery and Arctic Region (Finland, Ireland, Northern Ireland, United Kingdom, Sweden, Faroe Islands, Greenland, Iceland and Norway). Two councils, Derry City & Strabane District Council in Northern Ireland and Härnösand in northern Sweden have functioned as case studies when developing the model and tools. The councils, together with research partners, have developed new tools throughout the planning process, which have been added to the model. Recurring components from adaptation case study regions have been applied in have been applied in our model when they are deemed especially relevant for the adaptation planning process. The model aims to include significant detail without compromising its user friendliness, making it relevant for a wide range of users.

How to use the best practice model

The first requirement of adaptation planning is to gather information about the process, what resources are available and what resources are needed. The action plan **(Appendix 1)** and the situational analysis **(Appendix 2)** should be undertaken in the very beginning as an initial desk top exercise to enable the appointed coordinator to understand what level of assessment and adaptation planning will be undertaken, as well as prepare the necessary resources and committements. The guide then provides a range of templates and tools from which that coordiantor can choose depending on their needs.

The most important part of the climate adapatation process is to get started and move towards implementing climate action considerations in daily work.

The tools in this cycle provide examples and/or templates that facilitate the planning process. This can range from agendas to workshop templates. Most tools and templates are provided as appendices and referred to in the table overview at the end of each step. All five steps in the planning cycle include:

- A final self-check, a checklist with bullet points of items that should be accomplished after finalising the step.
- A table at the end of each step which gives on overview of the components and available tools.

Some components in the five steps are more essential than others, meaning that it is very difficult to manage without certain central components in the planning process whereas others can be regarded as optional. The essential components are marked in black in the tables at the end of each step, optional components are marked in purple. Most tools can be regarded as optional but we suggest that the action plan and the situational analysis always are carried out in the very beginning of the planning process.

Importantly, the International Best Practice Climate Adaptation Model is best described as an iterative process captured graphically in Figure 1. The aim is that local authorities revise and update their plans as new information and planning decisions are made so that climate adaptation becomes an integrated and important component of local planning work.

STEP ONE

Getting started

Several common considerations arise when starting your climate change adaptation journey as captured in **Step One.** Appointing a coordinator, getting more knowledge, building your adaptation planning team and governance structure, defining objectives, developing an understanding of climate change impacts and why they matter, and conducting a first pass risk assessment are some of the vital steps to start out with.

In the beginning, it is crucial to appoint a coordinator that has the main responsibility to manage the planning process. It is also the coordinator´s job to gather more knowledge about climate change and to investigate the level of preparedness in the organisation. The level of preparedness may differ quite significantly between different organisations and can influence the amount of work needed to get started. The components can be the same regardless the level of preparedness but the time necessary for each component in **Step One** can vary substantially.

It is also very important to get political anchoring early in the process because at the lowest level the sitatuional analysis does still require a small amount of time to undertake. It is crucial for elected representatives to understand why both climate adaptation and mitigation is important, how the climate is changing and how it affects society. If detailed data on future climate projections are available this will be useful, but consideration must be given to the level of detail required. In **Step One** this is likely to be a minimal requirement. At this stage a brief analysis of past weather events can help set the scene for the planning process by increasing the understanding and awareness of impacts, it should be noted that a more in depth analysis will be undertaken during **Step Two**.

A valuable and important component in the first step is to perform a situational analysis **(Appendix 2)**. The situational analysis gives a comprehensive overview of all the steps and outlines the purpose, expected outcome, requirements and resources in each step. The situational analysis is also a tool that can be used as a template as you go along through the planning procedure but is also very helpful to explore this tool when starting the project, to familiarise yourself with the planning steps. However, the main aim of the situational analysis is to map what resources are needed during the development of the adaptation plan, which also forms the basis for **Step Two** where the risk and vulnerability screening is made. Therefore, it is a vital component, since the availability of resources influence what type of risk assessment the project can attain in the next step.

When the situational analysis has been completed and the coordinator has mapped available resources, different levels of assessments of risks and vulnerabilities can be addressed. These different levels of assessment require different amount of detailed data, where the first level of assessment only requires qualitative data, whereas a third level of assessment requires detailed data of future climate projections. This tiered climate risk assessment framework, with three levels of assessments, provides a local organisation with the opportunity to minimise early use of resources and allows developing a communication strategy in a targeted manner. A tiered approach also allows decision makers to systematically navigate through the climate adaptation planning process by starting from a low knowledge base and minimum resource requirement. This ensures optimum use of an organisation's limited adaptation resources by

maximising the use of existing climate change data, maps and guidelines. These approaches focus on solutions (how to manage climate change risks by adapting) rather than the problem only (understanding climate change impacts).

1st level assessment

A first level assessment climate change risk screening is a rapid qualitative process which can be carried out without detailed local data to develop a preliminary understanding of the climate change risks of an organisation or sector. This quick process helps users to screen climate-related hazards and to identify specific risks that may arise from these hazards and should be investigated further. The first level screening is ideal for resource-constrained organisations with limited data and information available, unaware of the risks they face from climate change. It is an important early step in the climate adaptation planning process and a first level assessment is always carried out if the organisation/authority as working with climate adaptation for the first time. However, it is highly recommended to always carry out a first level risk screening. If the situational analysis reveals that there are enough resources to perform a second, or even a third level of assessment, the first level of assessment is still useful for mapping the risks and vulnerabilities more briefly. The less resource intensive first level assessment enables the building of an evidence-based case for further resources, and outputs of the first pass risk screening can be used to underpin a targeted risk communication strategy that can be used to support ongoing more detailed second and third pass risk assessments.

2nd level assessment

A second level risk assessment is more resource demanding and includes conducting a risk workshop with relevant stakeholders (identified through a first-pass screening) for identifying specific climate change risks, their likelihood and consequences and evaluating them against certain criteria. Through data, available information and expert knowledge a risk register is generated that can be used to support identification of adaptation options and opportunities. It is important to note that it is possible to develop organisation-wide adaptation plans using the outputs both from of a first-pass and a second level risk assessment and following the relevant decision-making steps in the model.

3rd level assessment

A third level risk assessment focuses on further investigation of prioritised, short-listed and site-specific risks (identified through a second level of assessment). Users should consider the necessity of this step before proceeding, as it is highly resource intensive. Third level assessments can be helpful, for example, in costly and long-lived engineering projects where it is necessary to gather detailed information on risk (e.g. estimated rate and extent of change) through detailed modelling or hazard studies before proceeding to design and associated investment decision making. A third level assessment is not purely quantitative and involves incorporating qualitative decisions from stakeholders such as identifying risk evaluation criteria, and decision on the relative importance of identified risks. Some elements of this process should be quantitative if the system at risk is critical (for example, if the consequences of system failure are severe).

For example, a third level assessment of an at-risk beach may include detailed modelling to estimate erosion rates or areas of risk from inundation. Modelling results can then be used to explore what assets might be at risk and to define trigger points at which action may be required to protect those at-risk assets. Another example of a third level risk assessment is cloud-burst simulations on a very detailed spatial scale (e.g. 2x2 m). These maps with heavy rain simulations can provide very useful information for several actors and end users outside the local aouthority, e.g. rescue services and transport sector.

BOX 1: An overview of the tiered assessment with the three levels of assessments.

1ST LEVEL ASSESSMENT
Provides a rapid overview and a preliminary understanding of the risks and vulnerabilities the organisation is facing. No detailed data is required, qualitative information is sufficient. The start can be from a low knowledge base. Helps users to screen climate-related hazards and to identify specific risks that may arise and should be investigated further (a useful base for future investigations).

This level can be sufficient for the climate adaptation work OR further assessments can be made, either continue with a 2nd level assessment or 3rd level assessment (or both, a more in-depthgeneral assessment (2nd level) AND a 3rd level for specific sites).

2ND LEVEL ASSESSMENT
Moderate quantitative data is available.

Includes a workshop with relevant stakeholders.

Climate risks are identified and their likelihood and consequences evaluated.

A detailed risk register is developed.

3RD LEVEL ASSESSMENT
Detailed quantitative data with high quality is available.

Detailed modelling ca be required. Highly resource intensive.

Often used for evaluating site- or area- specific risks.

The tiered approach

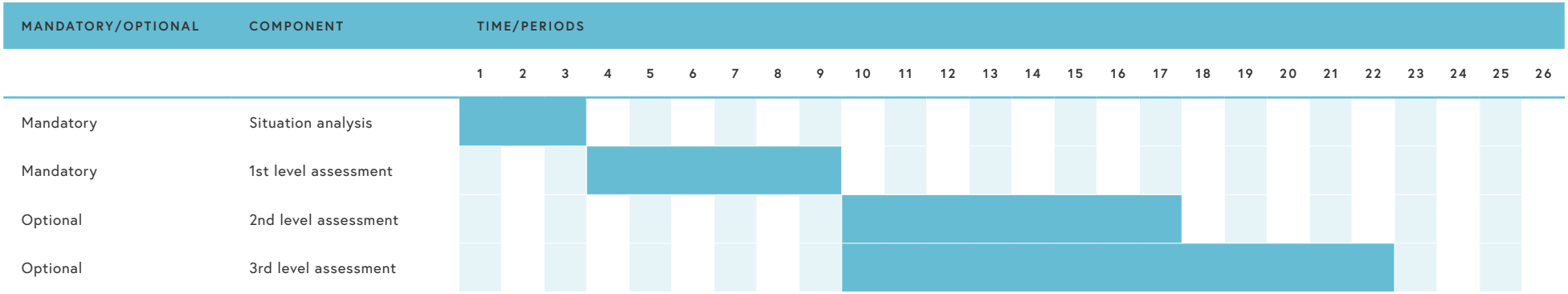


FIG. 2. An overview of the components relating to the tiered approach, including the timing and an indication of relative time resources needed. The time periods are however only relative indications and no exact time needed but can refer to weeks for a full time employment. "Mandatory" indicates that the step is important in the planning process and difficult to manage without. "Optional" indicates that the step is depending on resources avilable and both a 2nd and a 3rd level os assessment can be performed or only one (or neither) of them.

To summarise the different levels of assessments (Box 1 and Fig. 2), it is possible to establish a climate adaptation plan even if available resources and data are scarce because a first level assessment is possible even with limited resources and data. The steps are the same in all levels of asessments but level of details may differ. When the decision has been made on what level of assessment your organisation is aiming at, you then continue with assessing risk and vulnerabilities.

Depending on the organisational context and available resources, the planning process can be, to a very large extent, the responsibility of the coordinator. This can for instance be the case if the situational analysis shows that only a first level of assessement is achievable. However, if there is a clear anchoring politically and enough resources (man hours), the coordinator can also build a working group where the participants represents different service areas. Building a team can be an important step towards successful planning in the long run, not least if the objective is that climate adaptation should be an integrated part of strategic planning across the local authority after the climate adaptation plan is implemented. If a working group is formed, it is desirable to include participants from a wide variety of service areas in the municipality/council, but especially those most affected by the issue. A recommended size of the working group is 5-10 persons, depending on the size of the organisation.

TABLE 1: Step One adaptation plan components and available tools

COMPONENTS	TOOLS	APPENDIX
Appoint a coordinator – get an overview of task at hand	Action Plan Template	APPENDIX 1
Coordinator – get more knowledge (See links)		
Complete situational analysis	Situational analysis – a template. Time resources – an example.	APPENDIX 2 APPENDIX 3
Assembling adaptation planning team	Stakeholder Engagement Plan Template	APPENDIX 4 A) AND B)
Developing stakeholder understanding, engagement and collaboration	Community and Stakeholder Engagement Framework	APPENDIX 5
Anchor politically and coordinate responsibility		
Determine framing and scope for adaptation planning	Agenda and workshop group exercises first meeting – an example	APPENDIX 6
Define your objectives and values		
Raise awareness		
Understand why the impacts matter		
Express why you are considering adapting to climate change		
Establish roles, Responsibilities and governance – possibly establish a Working group	Draft Terms of Reference – an example	APPENDIX 7
Agree next steps		
Self check		

Checklist Step One – Get started

After this initial step, make sure that the following points have been achieved:

- ○ A situational analysis has been completed.
- ○ Knowledge of what a changing climate means and why climate adaptation is important.
- ○ Knowledge of potential requirements the legislation places on climate adaptation.
- ○ The issue of climate adaptation has been anchored and prioritized among local politicians.
- ○ One or two service personnel responsible for coordinating the climate adaptation work have been appointed.
- ○ The coordinator (and working group) understands the meaning of climate adaptation and why the municipality should work on the issue.
- ○ The coordinator (and working group) understands the differences between measures to limit climate emissions and measures for climate adaptation.
- ○ The coordinator (and working group) understands its role and what needs to be done.
- ○ The coordinator (and working group) has a common picture of the municipality's most important climate challenges.
- ○ The coordinator (and working group) is aware of what is being done in the municipality today and what climate challenges have already begun to be addressed.
- ○ Procedures for documenting the work have been established.

STEP TWO

Assessing Risks and Vulnerability

Fundamental components of **Step Two** in adaptation planning include exploring current climate and its variability in more detail, unpacking current and future impacts associated with climate change, assessing vulnerability and risk associated with current and future impacts of climate change, and beginning to explore both direct and indirect climate impacts such as cascading impacts to different areas e.g. human wellbeing, industry, natural environment, built environment, technical supply systems and tourism. This step can be rather resource demanding and, depending on the available resources, different levels of assessments can be achieved. Coordinators and decision makers can draw on various resources to support the planning process. This is especially important when a climate adaptation plan is produced for the first time. A lack of financial resource for adaptation is one of the major barriers to adaptation (e.g. lack of funding from central government, lack of institutions that facilitate financing adaptation, limited access to financial resources, lack of political willingness to mobilise financial resources).

The coordinator has a significant task at hand in this step, the coordinator should stay one step ahead with a basic understanding of the climate issue, this is valuable for joint group discussions in the up-coming work on the impact and vulnerability analysis (see also **Step One**, getting more knowledge). The preparations facilitate the work with the group discussions and analysis where consequences and vulnerabilities in the municipality's social functions are studied more closely.

The impact and vulnerability analysis is a key part of the adaptation work. It is important to include as many service areas as possible in the work. This gives a broader perspective in the analysis and makes it easier to identify vulnerabilities that are not immediately obvious. In addition, the more management perspectives that can be captured around an issue, the greater the opportunity to identify synergies. It may help to choose one climate effect to begin the analysis and then broaden the analysis with more climatic effects.

Some central questions that can guide you through **Step Two** are:

- Which groups and service areas are affected and how?
- How serious will it be if a particular weather event happens?
- How does the outcome vary with different impact scenarios and time perspectives?
- Are there particularly sensitive geographical areas? For example, bridges and tunnels near waterways or near the coast, drinking water supplies, designated power stations, heat islands in the city or areas to which roads can be blocked in the event of floods.
- Are there particularly vulnerable groups? For example, the elderly, children, the sick, socio-economically vulnerable?
- What measures have already been taken or are planned for?

TABLE 2: Step Two adaptation plan components and examples of available tools

COMPONENTS	TOOLS	APPENDIX
Check past weather events and future climate trends	Challenge diagram – exercise	APPENDIX 8
List the things you value that could be damaged		
Document the current impacts of climate change		
Screen for potential future impacts (1st level assessment)	Agenda and workshop content – an example	APPENDIX 9
Determine which of your places, services, assets, or priorities are exposed to harm and assess vulnerability and risk to each currently and in the future	Climate impact – an example and a template.	APPENDIX 10
Identify where responses to previous weather events could inform an adaptation plan	Past weather events and climate impact – an example	APPENDIX 11
Identify and review current practices, lead time challenges and barriers including risk management	Existing measures – an audit template	APPENDIX 12
Examine if climate risks will be more or less important than non-climate risks		
Develop a risk register linked with your sector and or location of concern	Agenda and workshop Future Vulnerabilities – an example	APPENDIX 13
	Vulnerabilities – a risk register template	APPENDIX 14
Consider any indirect climate impacts such as spill over impacts on tourism, human welfare, industry		
Self check		

Checklist Step Two – Assessing Risks and Vulnerability

After this initial step, make sure that the following points have been achieved:

- ○ There is a description of climate effects, both in today´s climate and in the future, relevant for the municipality, in place. This includes past weather events and their consequences.
- ○ The coordinator (and the whole working group) has knowledge and increased understanding of what impacts a changed future climate will have.
- ○ The coordinator (and the working group) has decided whether the plan will focus on geographical area or service areas that the municipality/council have full control of (power to decide).
- ○ Consequences of relevant future climate impacts has been identified and described.
- ○ Areas where more data and support are needed has been identified.

STEP THREE

Identify Options, Evaluation and Prioritisation

The third step is focused on identifying and prioritising adaptation options. Key components here include establishing decision criteria by assessing acceptable risk and deciding on the timing of actions. It is also important to investigate if there are any ongoing projects which can meet risks identified. As a final component in step three, a first draft on the climate adaptation plan is produced.

Climate adaptation measures can be of different types and it can therefore help the planning process if the group consider what types of measures that are available. In order to prepare for the step where measures are prioritised, it can be helpful to study different categories of actions to capture all options and it can also be useful to think outside the box. In addition, climate adaptation measures can have both direct and indirect effects. Some examples of different categories of measures are:

- **Analytical measures:** This comprises collection and development or more information (e.g. detailed data on cloudburst simulation or information from researchers or central authorities).
- **Governance and organisational measures:** Examples could be creating new forms of collaboration or even changing existing regulations at the local authority. It can also mean control through the detailed plan. These types of measures can also be aimed at sharing or spreading risks, for example through insurance.
- **Informational measures:** This is mostly about spreading awareness and an example is to informing citizens who themselves are at risk of being affected by climate effects, such as the benefit of installing check valves in residential basements. It can also mean that the municipality reviews its website and communication in crisis situations.
- **Technical and ecosystem based measures:** These are the practical and physical solutions, anything from low-tech solutions such as small stormwater installations, to more large-scale technological initiatives such as the construction of shelters along the coastline. This type of action can also be nature-based solutions, for example, the construction of wetlands or blue-green structure in urban environments.

The purpose of these examples of categories is to clarify the importance of thinking in different paths and to create an understanding that measures can be both direct and indirect, and that they can have different time perspectives on implementation.

Some examples of questions that can be useful in the climate adaptation measure discussions:

- Which category does the measure belong to?
- What do you want to achieve with the action (purpose)?
- Where should it be implemented (spatial distribution)?
- For whom / what does the measure reduce vulnerability (vulnerable groups of citizens, natural or cultural environments)?
- Approximately when should the measure be implemented (immediately, within 5 years, within 10 years, or within 30 years)?
- Which management or operations should be responsible for implementation?
- Are there other service sectors whose areas of responsibility are positively or negatively affected by the measure? Should these sectors be involved in implementation?
- Can the action proposals be integrated into existing plans and documents/projects (for example, a water and sewage plan or risk and vulnerability analysis)?

When a set of possible measures has been identified, it can also be useful to prioritise among the measures. There are different ways to prioritize and choose between action options but the main purpose of the step with prioritising is to inspire a systematic approach that provides guidance, facilitates and motivates the choice of measures.

Some more basic criteria that can be used when prioritising the measures can be:

- Measures that are cost-effective both in today's climate and for different future climate scenarios. Note! It can be very difficult to decide what a cost-effective measure is, it can be a cheap option with great impact but also much more expensive measures where the benefits still exceeds the costs in the long run. A cost-benefit analysis can be necessary for more costly measures **(Appendix 13)**.
- The measures are relatively inexpensive and provide relatively large benefits in the future expected climate ("low hanging fruit").
- The measures contribute to adaptation but also have other social, economic and environmental benefits, including climate change mitigation.

Depending on to what extent the measures fulfil these criteria, they become a higher priority.

The overall output from step three is a draft document which summarises and justifies the results and the decisions made during the planning work, i.e. a climate adaptation plan (or strategy) has been established. A starting point can be to decide what role the climate adaptation plan should play in your particular municipality/council - whether it should be a standalone document or a part of another governing document. A separate climate adaptation plan can clarify the work and make it easier to get a comprehensive grasp of the issue. On the other hand, integrating climate adaptation into another municipal control document can lead to a more efficient use of scarce resources. If you choose to conduct climate adaptation work within the framework of existing processes (for example in the risk and vulnerability analysis or as an add-on to the overall master plan), it is nevertheless advisable to produce a comprehensive document describing the most important parts of the climate adaptation work.

Some parts that the final adaptation plan may include are:

- **Introduction:** clarify the need for climate adaptation in the municipality and describe what it means.
- **Visions and goals:** description of the municipality's/council´s visions and overall goals regarding climate adaptation.
- **Responsibility and roles:** clarification of who is responsible for what.
- **Procedure:** description of how the plan has been developed.
- **Climate change and its effects:** events, consequences and vulnerabilities.
- **Climate-adaptive measures and criteria:** description of measures taken and criteria used for prioritizing them.
- **Implementation measures:** Action plan and time frame for implementation, responsibilities and resources.
- **Follow-up and evaluation:** description of how the plan and measures should be followed up and evaluated.

Discuss and anchor the draft on the climate adaptation plan with municipal/council board as well as with relevant committees, service areas and companies. In order to obtain the best possible conditions for continued work on the climate adaptation issue, the climate adaptation plan should be adopted politically.

TABLE 3: Step Three adaptation plan components and examples of available tools

COMPONENTS	TOOLS	APPENDIX
Check how others have responded to similar issues – benchmark adaptation plan actions	See links	
Establish decision criteria and assess acceptable risk		
Cost-benefit analysis	Cost benefit factsheet	APPENDIX 15
Prioritise and analyse identified risks and impacts		
Consider possible solutions for your highest risks		
Identify a long list of adaptation options		
Investigate possible synergies with ongoing projects		
Reduce your list of feasible actions		
Choose which of the proposed action options are best suited for implementation	Identify options, Evaluate and Prioritise – an example	APPENDIX 16
Decide timing of actions and decisions based on thresholds and lead times considering pathways planning	Adaptation Action Planning - template	APPENDIX 17
Produce a draft for the plan	Adaptation plan Strategic Overview – a template and an example	APPENDIX 18
	List of contents – an example of a drafted plan	APPENDIX 19
Self check		

Checklist Step Three – Identify Options, Evaluation and Prioritisation

After this initial step, make sure that the following points have been achieved:

- ○ There are suggestions on possible climate adaptation measures that are relevant for the municipality/council and that are fit for purpose.
- ○ The adaptation measures are realistic and possible to implement.
- ○ Adaptation measures already implemented or planned for, has been mapped.
- ○ Synergy effects (ongoing projects relevant for adaptation) have been identified.
- ○ Criteria for prioritizing among adaptation measures have been developed and documented.
- ○ A set of adaptation measures has been selected to be prioritized first and will be implemented (in near future).
- ○ Each selected measure has a service area in charge and a preliminary cost and time-line has been put forward.
- ○ A joint plan for continued work has been developed.
- ○ A first draft climate adaptation plan (CAP) has been presented.

STEP FOUR

Take Action

The outputs from **Step Three** are used to initiate action. Important components to consider when taking action include creating an implementation programme, moving forward with stakeholders who accept responsibility and bring resources to take action, and the communication of this implementation programme for ensuring that political anchoring is in place. The purpose of this step is to create an overview of the work and to clarify what needs to be done in order for the selected actions to be completed.

TABLE 4: Step Four adaptation plan components

COMPONENTS	TOOLS	APPENDIX
Move forward with stakeholders who accept responsibility and bring resources to take action	Workshop – an example of a group exercise	APPENDIX 20
Focus on partnerships and work with champions/leaders		
Create an implementation programme		
Collate and present adaptation actions		
Communicate plan with political anchoring in place		
Self check		

Checklist Step Four – Take Action

After this initial step, make sure that the following points have been achieved:

- ○ The project and outline of the CAP has been anchored among stakeholders (e.g. politicians and relevant governing boards).
- ○ Comments on the draft have been received.
- ○ A final CAP is presented and adopted with polictical support.

STEP FIVE

Monitor, Review and Evaluate

The final step in the adaptation planning process is the linch-pin of the entire process; monitoring, review, and evaluation. An adaptation plan without sufficient monitoring, review, and evaluation runs the risk of not delivering on its objectives. In addition, climate adaptation is an ongoing process that requires regular monitoring and evaluation in order for the work to be effective. Key components here include determining evaluation criteria, including action lists and indicators, the prioritisation of evaluation activities with an understanding that evaluation resources are limited, and communicating the results of the outcomes and actions to enable success to breed further action and success, or correct for insufficient or inadequate actions.

Following up on extreme weather events can also provide important lessons for the future. To make the process of monitoring and evaluation of climate adaptation as simple as possible, strive to find a method for monitoring and evaluation that easily can fit the municipality's existing routines.

Follow-up should be done to ensure that:

- Planned measures are implemented within the time specified in the action plans.
- Planned measures are implemented with the desired result and at the estimated cost / effort.
- Identify barriers for implementation of planned actions.
- Preparedness for dealing with extreme weather events exists and that experiences from past weather events are utilized.

Evaluation should be done to evaluate the results of climate adaptation work in general to:

- Ensure that the work achieves the visions and goals that have been formulated.
- Promote continuous learning: Are we doing the right things? Are we doing things right?
- Ensure that adaptation work does not create new problems.
- Identify unexpected climate impacts and manage these properly.
- Raise public awareness around the progress towards a climate-adapted and resilient society.
- Ensure that visions and goals are formulated correctly. Do they need updating?

TABLE 5: Step Five adaptation plan components

COMPONENTS
Prioritise your evaluation activities, recognising that evaluation resources are limited
Understand how specific traits of climate adaptation can make evaluation challenging and how you can overcome these challenges
Check to see if your actions are increasing the resilience to exreme weather conditions
Determine evaluation criteria including action lists and indicators (Set Key Performance Indicators)
Monitor outcomes and reflect on your learnings
Communicate the results of the work
Self check

Checklist Step Five – Monitor, Review and Evaluate

After this initial step, make sure that the following points have been achieved:

- ○ There is a clear objective with the monitoring and the evaluation processes.
- ○ Existing follow-up procedures at the municipality/council have been explored.
- ○ Relevant metrics have been produced.
- ○ There is a defined and clear plan on how the processes of monitoring and evaluating should be performed.

More information and inspiration can be found at:

The C.L.I.M.A.T.E. Project
More information about the project and the best practice model can be found on this site. More tools and tools as excel files etc. can also be found here". A very useful starting point if you want to learn more about climate adaptation and learn more about the adaptation planning process through two case studies.
climate-project.net

SIDA and SEI – weADAPT
It is a very useful site if you are looking for good examples. weADAPT is a collaborative platform on climate change adaptation issues. It allows practitioners, researchers and policy-makers to access credible, high-quality information and connect with one another.
www.weadapt.org/

EU – Adapt
A very useful site with information on progress on national level (within EU), policy documents, case studies, Urban Adaptation Support Tool, news, events and much more:
climate-adapt.eea.europa.eu

Swedish Meteorological and Hydrological Institute
a) A portal/knowledge hub with information on Climate Adaptation in Sweden. Policy documents (roles and responsibilities), projections on future climate (with resolution down to regional level), Governmental agency network, climate research, case studies, web-based guide for small/medium sized municipalities for working with climate adaptation (and developing plans/guidelines):
www.smhi.se/en/theme/climate-centre

b) Guidelines for local climate adaptation (In Swedish), a step-by-step tool with advice and a lot of inspiration:
www.smhi.se/lathund-for-klimatanpassning

Climate Ireland
A very comprehensive knowledge hub. They provide information, advice and support to help Ireland adapt to our changing climate. A lot of information, data, inspiration and tools, relevant for Ireland, is collated here:
www.climateireland.ie

Climate Northern Ireland
A knowledge hub for information about climate change and climate adaptation. Climate NI raise awareness of the impacts of climate change within organisations and the general public, and supply them with the information they need to adapt:
www.climatenorthernireland.org

Adaptation Scotland
A collation of information, intended to help public sector, businesses and communities to understand what climate change will mean across Scotland, and identify the best way for them to plan for the impact – taking the opportunities and preparing for the risks:
www.adaptationscotland.org.uk

The Covenant of Mayors
The Covenant of Mayors is supported by the European Commission and is the world's largest movement for local climate and energy actions. They provide tools for Climate Adaptation and a database with Adaptation plans all over the world:
www.covenantofmayors.eu

Appendix

Appendix 1 – Action plan

Template

PLANNING CYCLE PHASE	MILESTONE	ACTION	TIMESCALE	OWNER
1. GET STARTED	Conduct Situational Analysis	Municipality climate lead to complete matrix, SWOT & PESTEL analysis and identify suitable level of adaptation planning		Adaptation Planning Lead Officer
	Anchor Politically	Undertake stakeholder engagement to anchor politically & engage necessary colleagues in planning process		Adaptation Planning Lead Officer
2. ASSESS RISKS & VULNERABILITY	Explore current climate impact	Develop climate impact profile		Adaptation Working Group
		Explore at workshop 2		Adaptation Working Group
	Identify existing adaptation measures	Conduct audit of existing measures (1-1 meetings with departments & follow up)		Adaptation Planning Lead Officer
		Explore at workshop 2		Adaptation Working Group
	Build Risk Register	Develop and populate Risk Register		Adaptation Planning Lead Officer
	Screen for future impacts	Collate available climate projection data		Adaptation Planning Lead Officer
		Create database & maps for municpality: • Municipality Assets • Socio Economic Profile • Infrastructure • Industry • Tourism • Health and socal care facilities • Education facilities • Existing flood alleviation & drainage infrastructure • Land use and composition		Adaptation Planning Lead Officer
		Produce maps to be used in Workshop 3		Adaptation Planning Lead Officer
	Identify future vulnerability	Explore at workshop 3		Adaptation Working Group
	Identify future vulnerability	Collate information from workshop and create vulnerability maps / list of priority areas		Adaptation Planning Lead Officer

3. IDENTIFY OPTIONS, EVALUATE & PRIORITISE	Assess Acceptable risk	Discuss with relevant departments (1-1 meetings with departments & follow up)		Adaptation Planning Lead Officer
	Identify priority risks	Discuss with relevant departments (1-1 meetings with departments & follow up)		Adaptation Planning Lead Officer
	Identify solutions for highest risks	Identify case studies / best practice examples of solutions		Adaptation Planning Lead Officer
		Discuss with relevant departments (1-1 meetings with departments & follow up)		Adaptation Planning Lead Officer
	Choose actions best suited for implementation	Explore at workshop 4		Adaptation Working Group
	Decide timing of actions	Explore at workshop 4		Adaptation Working Group
4. TAKE ACTION	Produce draft Adaptation Plan	Write text / design draft document		Adaptation Planning Lead Officer
	Review & finalise draft Adaptation Plan	Explore at workshop 5		Adaptation Working Group
	Create Implementation Programme	Produce action plan and liaise with responsible departments (1-1 meetings with departments & follow up)		Adaptation Planning Lead Officer
	Undertake required consultation exercises	Undertake • Equality Impact Screening • Stakeholder Consultation		Adaptation Planning Lead Officer
	Production of final document	Final design and print		Adaptation Planning Lead Officer
	Secure approval	Secure Committee & Full Council Approval		Adaptation Planning Lead Officer
5. MONITOR, EVALUATE & REVIEW	Determine evaluation criteria – action lists, indicators	Produce evaluation plan		Adaptation Planning Lead Officer
	Prioritise cost effective evaluation activities			
	Monitor outcomes and reflect on learning			
	Communicate results			

Appendix 2 – Situational analysis

Template

STEP ONE – GETTING STARTED				
ACTIONS	**COMPONENTS**	**PURPOSE/OUTCOME**	**REQUIREMENTS**	**RESOURCES**
Assembling adaptation planning team	Establish Working Group	Ensure effective structures, and direction for the adaptation planning process to be undertaken	Set up adaptation Planning Team/ Working Group Relevant service area representatives (These should be of sufficient level to ensure decision making and actions are undertaken) GIS Officer Agree Terms of Reference	Time and budget for facilitation of meetings
	Appoint / designate coordinator	Ensure coordination & delivery of the adaptation plan process and actions	Designated coordinator / climate officer assigned to the adaptation planning process	Budget – Salary Time
Developing stakeholder understanding, engagement and collaboration Anchor politically and coordinate responsibility	Develop suite of evidence to secure support and involvement	Build "The Case for Adaptation"	Information & data (evidence) to secure support for adaptation National and Local Policy Context Climate Impact Data/Information Economic arguments/Case for adaptation	Time and/or budget to commission research
	Stakeholder Mapping / Analysis (Identify core team & associated stakeholders)	Secure support and involvement in the adaptation plan process to ensure delivery, ownership and sustainability of the plan and adaptation actions	Engagement with relevant stakeholders to identify working group/ adaptation planning team and future collaboration partners	Time
			High level support/ commitment and mandate (this will be necessary to ensure ownership across all services and attendance at meetings) Senior Management Team Local Elected Representatives Relevant Regional Agencies	Budget/Staff time for design of adaptation brand

Determine framing and scope for adaptation planning	Map relevant policy, legislative and regulatory instruments	Understand general strategic context for adaptatation relevant to the municipality	Research into relevant policies	Time (Staff)
	Audit existing actions	Gain an understanding of existing state of play	Audit existing adaptation activities Audit service areas that are particularly vulnerable to impacts of climate change and current actions in place to cope with extreme weather events and future risk	Time and budget for facilitation of meetings and review of existing documents
Set vision and goals Move to **Step Three**	Define communication plan for Adaptation Plan process	Provide direction for adaptation planning process and it's promotion to be undertaken	Working group - workshop (participatory exercises based on desktop research and prepared documents)	Time Budget for facilitation of meetings Budget for communication tools (Brand, digital and print activities)
Check past weather events and future climate trends				
List the things you value that could be damaged				
Document the current impacts of climate change	Undertake climate impact and vulnerability analysis	Gain insight into current extreme weather climate impacts and existing vulnerabilities	Collect stakeholder input re impacts and trends relevant to particular departments and sectors Research occurrence of severe weather events and impacts from newpapers, council records etc. Map identified impacts on GIS database	Time Budget for facilitation of meetings
Understand why the impacts matter				Time
Express why you are considering adapting to climate change				Time
Establish roles, Responsibilities and governance				Time
Agree next steps				Time
Anchor politically and coordinate responsibility				Time

STEP TWO – ASSESSING RISKS AND VULNERABILITY				
ACTIONS	**COMPONENTS**	**PURPOSE/OUTCOME**	**REQUIREMENTS**	**RESOURCES**
Conduct first pass risk screening				
Determine which of your places, services, assets, or priorities are exposed to harm and assess vulnerability and risk to each currently and in the future	Asset Profiling	Assessing impacts and associated costs linked with climate change	Profile of municipality assets and vulnerabilities, socio-economic, biodiversity, heritage, infrastructure (current and projected profile for the area) Use GIS for asset mapping	Time and/or budget to commission research
Identify where responses to previous weather events could inform an adaptation plan				Time and/or budget to commission research
Identify and review current practices, lead times challenges and barriers including risk management				Time and/or budget to commission research
Examine if climate risks will be more or less important than non-climate risks				Time and/or budget to commission research
Develop a risk register linked with your sector and or location of concern				Time and/or budget to commission research
Consider any indirect climate impacts such as spill over impacts on tourism, human welfare, industry	Policy Alignment	Align identified climate risks to specific policies, legislation and regulations	Draw on policy review (carried out under framing and scope for adaptation) to carry out a more detailed policy mapping exercise linked with specific climate risks for the municipality	Time

STEP THREE – IDENTIFY OPTIONS, EVALUATION AND PRIORITISATION				
ACTIONS	**COMPONENTS**	**PURPOSE/OUTCOME**	**REQUIREMENTS**	**RESOURCES**
Assess sectoral consequences				
Check how others have responded to similar issues				
Establish decision criteria and assess acceptable risk				
What are your priority risks that need and adaptation response	Prioritise and analyse identified risks and impacts	Creating a prioritised list of impacts and risks which the adaptation plan seeks to address	Stakeholder participation - Carry out a workshop to undertake a risk prioritisation exercise (This step is informed by the climate impact profiles undertaken by the municipality)	Time Data Budget for facilitating meetings
Consider possible solutions for your highest risks	Assess the capacity of existing adaptation measures and actions to address prioritised climate risks (aligned to management objectives)	Scoping out the existing adaptive capacity	Stakeholder involvement - workshop to undertake existing adaptation analysis exercise	Time and Budject for facilitation of meetings
Identify long list of adaptation options	Identify adaptation options/ actions (short, medium, Long term) for each priority climate risk and categorise	Creating a portfolio of all possible options to map out decision making space	Stakeholder involvement - workshop to undertake option scoping exercise Reseach and draw on existing database of relevant case studies to inform adaptation options	
Conduct 1-1 meetings where required	Time Budget for facilitation of meetings			
Reduce your list of feasible actions	Evaluate and assess the draft options against agreed criteria within a decision making matrix to produce final set of options e.g. risk mapping	Screen options to arrive at those which will be implemented	Stakeholder involvement – workshop to undertake assessment and prioritisation of actions. Draw on evidence qualitative and quantitative (monetary costs) associated with adaptation options to inform the assessment and decision making exercise (Consider likelihood for funding and delivery of each adaptation action)	Time Budget for facilitation of meetings
Choose which of the proposed action options are best suited for implementation			1-1 meetings	
Decide timing of actions and decisions based on thresholds and lead times considering pathways planning	Develop adaptation pathways map and identify preferred routes	Screen options to arrive at those which will be implemented over the short, medium and long term	Stakeholder involvement - Workshop to undertake pathways planning	Time Budget for facilitation of meetings

STEP FOUR – TAKE ACTION				
ACTIONS	**COMPONENTS**	**PURPOSE/OUTCOME**	**REQUIREMENTS**	**RESOURCES**
Move forward with stakeholders who accept responsibility and bring resources to take action	Deliver adaptation actions	Delivering adaptation actions increases resilience to current and projected climate change within the municipality	Stakeholer involvement - Carry out actions as agreed (links with **Step Five**: Monitor, Review and Evaluate)	Budget/funding to deliver adaptation actions
Focus on partnerships and work with champions/leaders				
Create an implementation programme	Set adaptation and management objectives for the prioritised risks	Import step to link risk prioritisation with implementation and action	Engage with relevant stakeholders to set adaptation and management objectives for the prioritised risks Catagorise objectives e.gAnalysis Management & Organisational Engagement, Awareness & Behavioural Technical & Green Infrastructure Or Enabling – Building Adaptive Capacity Planning & Adaptation Action	Time Budget for facilitation of meetings
	Prepare specific short, medium and long term project plans for preferred adaptation options	Breaking plan into short, medium and long term components increases likelihood of action and accountability, and reduces uncertainty in implementation	Adaptation Plan/Action sub-groups to deliver specific actions (led by "Climate Officer") Continued support and involvement of relevant stakeholders to ensure delivery of actions	Budget - Salary Budget - Communication and engagement for adaptation actions Time - planning and delivery
Collate and present adaptation actions	Prepare final Adaptation Plan Document	Finalising and publishing Adaptation Plan Document captures the processs undertaken as well as the the final list of adaptation actions and timeline. (Note this is a living document - See **Step Five**)	Final formatting (including graphics), editing, publication	Time Budget for editing, formatting, printing
Communicate plan with political anchoring in place	Adaptation Plan communication including high level political representation	Promoting the plan helps to raise awareness, increase buy-in, facilitate behaviour change	Launch the plan at public event with high level political representation Create press release/s Social media posts Executive Summary with key messages Short summary documents aimed towards different sectors/audiences	Time Budget for communication outputs

STEP FIVE – MONITOR, REVIEW AND EVALUATE				
ACTIONS	**COMPONENTS**	**PURPOSE/OUTCOME**	**REQUIREMENTS**	**RESOURCES**
Assess the plan against Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA)				
If required within the municipality				Time and/or budget to commission
Prioritise your evaluation activities, recognising that evaluation resources are limited				
Understand how specific traits of climate adaptation can make evaluation challenging and how you can overcome these challenges				
Determine evaluation criteria including action lists and indicators Check to see if your actions are increasing your resilience and addressing climate risk	Develop monitoring and evaluation matrix and review periods to measure performance against the overall plan vision and objectives	Setting evaluation criteria is important to realise action and create accountability for implementation. It also increases awareness of cliamte action wthin the municipality	Agreed evaluation metrics to be established Data (Qualitative and quantitative) to evaluate costs/ benefits of adaptation actions Stakeholder feedback	Budget - Climate Officer Salary Time Data
Monitor outcomes and reflect on your learnings	Determine what improvements can be made to the process and actions	Reflecting on the "learning by doing" process is an important element of determining the success of the Adaptation Plan, improving the implementation process, and revising and improving future plans	Stakeholder feedback Data (qualitative and quantitative) to establish success and look for improvement	Budget - Climate Officer Salary Time Data
Communicate the results of the work				

Appendix 3 – Time resources needed in the planning process

An example from Härnösand

PM Planning resource record Härnösand

Estimated time for every participant and workshop, approx. 12 hours, includes preparation before, participation in WS and additional work after workshops.

Planning phase – 1. Get started and 2. Assess risks & vulnerability, approx. time 250 hours
10 + 11 persons in 2 Workshops (in Härnösand, 2014)

Planning phase – 3. Identify options, evaluate & prioritise, approx. time 360 hours
1x Workshop to re-establish working-group (from phase 1 and 2.) Working-group 6 persons.

(3+1) x Workshops for Identify options, evaluate & prioritise (also includes time for identifying the need for procurement and to set the structure for the adapation and action plan)

Total time approx. 610 hours

Time will have to be added for planning phase - 4. Take action

- Procurements needed (Härnösand made 4 procurements in the project)
- Produce draft adaptation plan
- Consultation excercises
- Review and finalise draft adaptation plan
- Communicate results

And time to continue the adaptation planning cycle 5. Monitor, evaluate and review – and repeat in line with the implementation program.

Appendix 4a – Stakeholder Engagement Plan

Template

2 A) ADAPTATION PLAN STAKEHOLDER ENGAGEMENT PLAN
PROJECT AIMS & OBJECTIVES Add aims and objectives speficic to the local authority
ULTIMATE VISION Add for the local authority
HOW/WHAT WE ARE ABOUT
WHY IT MATTERS **Impacts of Climate Change:** • Environmental – landscape, habitats and species • Emotional and psychological • Physical – infrastructure, landscape, place • Availability and quality of water • Occurrence of pests and disease • Productivity of agriculture • Security and efficiency of energy supply **Benefits of adaptation (Potential benefits include):** • Projects which enhance the local environment e.g. greenways, tree planting, habitat creation • Continued service delivery • Improved landscape and associated health and wellbeing e.g. outdoor recreation sites • Improved air quality • Reduced risk from extreme weather events (psychological benefit – reassurance) • Reduced financial risk / economic impact • Robust and resilient infrastructure e.g. water supply, roads, food transportation/supply chain etc
TAG/STRAP LINES
BRAND PURPOSE/OBJECTIVES & VALUES
Key Words • Trust • Credibility (Plans and actions supported by robust scientific research/evidence and best practice) • Relevant – we need to connect with people at a local level and be relevant to their life

Appendix 4b – Stakeholder Engagement Contact Database

Template

EXTERNAL STAKEHOLDER	ORGANISATION	EMAIL	CONTACT NUMBER	MOTIVATIONS & RELEVANCE	COMMUNICATION TOOLS	RECORD OF ENGAGEMENT
NGO						
Social and community NGOs in project areas						
Tourism bodies						
Sports and Recreation clubs						
Education bodies / schools						
General public in project area						
Housing organisations						
Business & Technology Organisations						

INTERNAL STAKEHOLDER	DEPARTMENT	EMAIL	CONTACT NUMBER	MOTIVATIONS & RELEVANCE	COMMUNICATION TOOLS	RECORD OF ENGAGEMENT
Elected representatives						
Add relevant local authority contacts						

Appendix 5 – Community and stakeholder engagement framework

Community and Stakeholder Engagement Framework

Introduction

The CLIMATE project brings various stakeholders together to deliver programmes across; Northern Ireland, Sweden, Republic of Ireland and the Faroe Islands, in addition Associate Partners from Finland, Scotland, Norway and Iceland. The project will tackle climate change on local and regional levels through using models of best practice to develop climate adaptation plans for local authorities.

The main project objective is:
"Promote and improve climate change awareness in European peripheral rural communities through a knowledge-based approach and community led sustainable resource planning that will mitigate against future climate impact and incorporating transnational collaboration through a best practice model which will improve preparedness for sustainable environmental management in future years".

This will be achieved through the development of;

1. **Research Models of Best Practice and Develop a Preparedness Scale & Risk Register:**
   Develop models for policy makers which can be adapted to be used to educate local people, community groups and statutory/voluntary organisations on local, regional, national and international issues
2. **Produce Climate Adaptation Plan:**
   The Climate Adaptation Plan will be targeted at public authorities & environmental agencies in each partner region by illustrating methods for climate change adaptation interventions to government authorities and local communities in the NPA region.
3. **Conduct a comprehensive evaluation and review of the project which will aid local authorities in their preparedness in addressing climate change:**
   This will provide an enhanced capacity and preparedness of environmental agencies to handle the risks connected to climate change and contribute towards the overall programme objective of increasing the preparedness of competent authorities.

The primary research methods into Climate Change used in Sweden, Faroe Islands, Norway, Finland and Iceland will enable the transfer of knowledge to Northern Ireland & Republic of Ireland where organisations in these countries will use their skills in community engagement/environmental education to bring the results of the primary research to a new audience.

Purpose of the Plan

The purpose of this Community Engagement and Stakeholder Plan is to provide a framework for how the CLIMATE project engages with its audiences to develop a greater understanding of their needs, and to increase the level and quality of involvement in the decisions that affect their lives.

This plan aims to clarify:

- the principles underpinning the CLIMATE project's community engagement activities;
- the different activities involved in community engagement and the purposes of these activities; and
- progress that has been made so far in different areas of community engagement and our plans for the future.

Aims

Raise awareness

- Undertake community engagement activities
- Produce a suite of engagement tools & resources
- PR and social media activity
- Newsletter

Increase Knowledge

- Distribute and promote engagement tools and activities
- Maintain and develop information on municipality websites
- Undertake community engagement activities

Influence Behaviour

- Produce practical factsheets
- Undertake social media campaign

Climate Change Issues

The plan will build upon the existing CLIMATE Project Communication Plan which provides a framework for general communication about the project internally and externally. The Communication and Stakeholder engagement framework will seek to address the following:

Gaps in knowledge – Recognise that lack of understanding and misconceptions about climate change are quite common, and that some engagement will simply involve conveying information. It is also important to recognise that information alone does not provide sufficient impetus to change behaviour.

Acknowledge uncertainty: Be honest about the uncertainty involved in climate prediction, but try to simplify this by identifying what is common to the different scenarios and projections, and by drawing comparisons to uncertainties in other areas. It can be useful to present action in response to climate change as a risk management issue, rather than implying that climate change is "proven".

Address scepticism: Engage with influential members of the stakeholder community to address scepticism regarding climate change. Recognise there is little probability that entrenched scepticism can be reversed, however it is important to provide messages that directly address the claims and arguments of sceptical individuals.
Address emotional reactions: In discussing climate change issues, especially in the process of promoting notions of personal vulnerability, individuals may feel helpless and/or fearful, which can stall or prevent behaviour change. These feelings can be overcome by identifying positive and tangible actions that participants can take, and by encouraging them to focus on being part of a collective response.

Principles of Stakeholder Engagement

Stakeholder engagement enables smooth and effective development and delivery of the municipality climate adaptation plans.

Reasons to undertake stakeholder analysis and engagement

- Learn who is responsible for what, and the difference each stakeholder can make if they are part of the process
- Understand and manage the perceptions and expectations of stakeholders regarding the adaptation process
- Share knowledge and be fully accountable for the process
- Ensure stakeholder support to take action
- Be more prepared as a group, building adaptive capacity through long-term working relationships

Guidelines:

1. **Commitment**
   Give engagement sufficient priority, space, time and resources. Demonstrate that it is a genuine attempt to understand and incorporate other opinions even when they conflict with the existing point of view. To do this set realistic goals and targets of engagement given available resources and capacity.
2. **Inclusiveness**
   Ensure participation of all stakeholders who have an interest in or who would be affected by a specific decision, including groups that are sometimes more challenging to engage. To ensure this undertake stakeholder analysis through a mapping exercise and create a database with schedule of contacts, events and communications activities. (See appendix A Stakeholder Engagement Template)
3. **Accessibility**
   Provide different ways for a variety of types of audiences to be engaged and ensure that people are not excluded through barriers of language, culture or opportunity.
4. **Transparency and clarity**
   Ensure that all stakeholders are given the information they need, told what they can or cannot influence by responding to engagement and what the next steps will be.
5. **Accountability**
   After the engagement process ensure that participants receive feedback of how and why their contributions have or have not influenced the outcome. Also ensure that there are routes for follow-up including reporting on final decisions and/or implementation plans.
6. **Responsiveness**
   When undertaking engagement be open to the idea that existing plans may need to be changed, improved or even deleted. For those being engaged with they must believe that their voice will be taken seriously, and that things can be changed if there is support for change.
7. **Willingness to learn**
   Encourage both those carrying out the engagement and the participants to learn from each other. This means a style of process that is as interactive and as incremental as possible to build increasing layers of mutual understanding and respect.
8. **Productivity**
   Establish from the outset how the engagement process will make something better. Maximise the benefit of the engagement activity by effectively sharing data and information

Communicating with Stakeholders & Audiences

Communication of climate change with stakeholders should follow the principles of interpretation which is not simply presenting information, but a specific communication strategy.

Adopting the principles of interpretation during the communication process translates information for people, from the technical language of the expert and climate science, to the everyday language of the stakeholder.

Interpretive communication follows a 3 step process:

- Provoke curiosity, attention and interest in the audience
- Consider the perspective of the audience, and why would the audience want to know this information?
- The answer to that questions ends up being the graphic, photo, or statement that gets the audience's attention.

- Why would the audience want to know this?
- Find a way to relate the message to the everyday life/ circumstance of the audience.
- This gives the audience a reason to pay attention and want to hear/learn more.

- Reveal the ending or answer of the communication through a unique or unusual perspective of viewpoint.
- Save the answer to last.
- The reveal tells the audience why the message was important for them, or how they can benefit from the information that was communicated to them.

Key Engagement Strategies

Below are ten key strategies for creating effective messages about climate change and where the principles of interpretation can be applied:

1. Know your audience and tailor your message(s) accordingly. **(RELATE)** Effective stakeholder mapping will help achieve this.
2. Know what type of claim you are asserting. **(PROVOKE)**
3. Connect the message to cultural values and beliefs. **(RELATE)**
4. Make the message meaningful. **(PROVOKE & RELATE)**
5. Lead with your strongest argument. **(PROVOKE)**
6. Make the message empowering. **(REVEAL)**
7. Link global patterns to local action. **(RELATE & REVEAL)**
8. Partner with other organisations (such as local authorities, schools and community groups).
9. Start from the inside and inspire action within your organisation/agency.
10. Communicate about actions you/your organisation are already taking to mitigate and adapt to climate change. **(REVEAL)**
11. Set realistic targets and actions. Inspire local action so people feel they can make a difference.

Communication should consider **why** an audience would want to know the information and **how** do we want them to use it.

What are the messages/information to be conveyed?

Who is the audience

How will this be communicated – the techniques/media used which are most appropriate to the target audience

Crucially how we communicate should be participatory delivering a 2-way process in which the audience can engage in meaningful dialogue where possible in order to ensure authentic engagement and ownership.

It is important to note that use of place-based communication about climate change is critical. It is based on the premise that people are connected to places; they have unique bonds with and value local landscapes and places such as wildlife refuges; and finally, people remember lessons and adopt behaviours when they feel a sense of responsibility and have knowledge of consequences.

Methods of Community Engagement

The CLIMATE Project's Community Engagement Plan is based on the widely accepted 'ladder of participation' model, which shows an increasing level of community involvement as one moves "up" the ladder from left to right, as shown below.

Increasing Level of Community Involvement

INFORM	RESEARCH	COSNULT	COLLABORATE	EMPOWER
To provide stakeholders with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and solutions.	To gather and collate information to help in the understanding of key issues.	To obtain public feedback on analysis, alternatives and decisions.	To partner with stakeholders in each aspect of the decisions including the development of alternatives and the identifiction of the preferred solution.	To place final decision making in the hands of stakeholders.

When deciding on how stakeholders and community might be involved, i.e. which level of engagement to use, we must carefully consider the nature, scale and impact of a particular function or issue, and must promote equal opportunities for people to engage and get involved. Engagement requires a range of mechanisms which build and sustain a conversation with the community, with a broad or narrow audience as the issue requires.
Broad principles and general ideas could be consulted on across a wide audience while the details of implementation might require input from a much smaller group. Effective engagement means identifying the kinds of audience that need to be involved at each stage of the adaptation process on any given issue. This requires a good understanding of the networks of interest and expertise in the area.

Tips for Engagement

TIP 1 – Understand the interests and influence of stakeholders in the process (Know your audience).
Set aside time for performing a stakeholder analysis. In respect of organisations and internal colleagues an option would be one-to-one meetings with key potential participants – telephoning or visiting individuals to understand what motivates them and to convince them to become an active member of the process.

TIP 2 – Plan how you will engage stakeholders from the beginning.
Effective stakeholder mapping will provide a clear picture of who to engage and why and which processes they should be involved in/with. It is important to remember to manage people's expectations with the resources available. An appropriate combination of general awareness raising with the general public as well as expert groups, small working groups and the wider, more diverse stakeholder groups will all help to facilitate the process throughout the various stages.

TIP 3 – Keep stakeholders interested and informed by using appropriate techniques. Beware of consultation fatigue.
For most, stakeholder fatigue and institutional change with associated staff turnover can be constraining factors. When working with organisations and internal colleagues effective and clearly understood dissemination methods and an accountable trail (such as meeting minutes) need to be used to mitigate against these threats.

Follow the communication and interpretation principles and opt for a wide range of techniques to cater for a different audiences including printed media (flyers, brochures, etc), audio-visuals, websites or blogs, social networking, mailing lists, events, and public relations as communication tools.

TIP 4 – Good facilitation and knowledge of your methodology
Not all individuals have the required skills to plan timings of activities, to resolve stakeholder conflicts with differing opinions, or even know when it is the right time to provide information to participants. Ensure personnel have these skills. If they do not, hiring an experienced facilitator will benefit greatly.

TIP 5 – Don't overlook the logistics of workshops
When planning a workshop, the following should be considered:

- Appropriate invitations
- Venue, location, seating arrangements, facilities, room temperature, acoustics
- Food
- Budget
- Sending the agenda and an informative summary to delegates prior to the event.

Also ensuring your event does not coincide with other events, can make all the difference in gaining stakeholder participation, feeling keen and comfortable, and ready to give their best.

GDPR Considerations

When collecting data it is important to ensure that we are complying with the new General Data Protection Regulations (GDPR) which came into effect on May 25th 2018. The easiest way to do this is to attach a consent statement (see below) to the beginning (not the end) of any registration forms participants are completing. There is one attached that you can use.

If you are using sign in sheets place the consent statement at the top of the sheet and draw the participants attention to this before they complete their details. If you are gathering information over the phone you will have to read this out and get the person to confirm their consent before any information is collected.

"To comply with the General Data Protection Regulations we require you to give consent for the information you provide us to be stored within our database system. We will use this data solely for the purposes of the CLIMATE project . Once the need to retain this information has come to an end we will dispose of it appropriately in accordance with our Data Disposal Policy."

Name: _____
Date: _____

On any new databases please add in columns to state why you have the information and when and how it will be disposed of.

Stakeholder Engagement Plan

Key Messages and How we will Communicate with our Audience.

AUDIENCE	MOTIVATIONS AND RELEVANCE	KEY MESSAGES	HOW WE WILL COMMUNICATE
Project and Associate Partners	Committed project partners (partnership agreement and match funding commitments in place) Project outputs relevant to their areas and regional priorities	Project Performance & Delivery Key research findings and knowledge sharing	• Project Website • Social Media • Newsletter • Leaflets • Posters • Presentations • Press Releases • Radio • Research papers • Adaptation plans • Monthly meetings • Quarterly steering group meeting • Basecamp (online document sharing platform) • 1 to 1 team discussions
Government Departments in Northern Ireland, Sweden, Faroe Islands, Lapland, Ireland	Compliance with national legislation and delivery of strategic priorities. Influence and inclusion in Policy Critical role of local authorities	Project and adaptation plans will help delivery of key government targets Impact on infrastructure e.g. road closures Impact on society, agriculture, economy, health and well-being and natural and built environment	• Adaptation plans • Workshops • Press Releases • Presentations / Meetings • Research Papers • Reports submissions / consultation responses
NGOs	Delivery of key priorities e.g. • Environmental conservation / improvement • Recreation • Health and Well-being • Tourism	Project and adaptation plans will help deliver key NGO targets	• Project Website • Social Media • Newsletter • Leaflets • Posters • Presentations / Meetings • Workshops • Press Releases • Radio • Research papers • Adaptation plans • Reports • Consultation Responses

Social and Community NGOs in project areas	Climate change is impacting people's health and well-being.	Benefits of adaptation planning	• Social Media • Newsletter • Leaflets • Posters • Press Releases • Radio • Meetings • Presentations
Tourism bodies	Tourism industry can be impacted in a number of ways including disrupting transport, closed sites of interest and destruction of our natural environment.	Destruction of natural environment Impact on transport Economic impact	• Project Website • Social Media • Press Releases • Radio • Research papers
Sports and Recreation clubs	Climate change and changing weather events can impact on the condition of sports fields and disrupt game fixtures.	School closures Road closures Impact on premises	• Project Website • Leaflets • Posters • Presentations • Press Releases • Radio • Research papers
General public in project area	Climate change is impacting members of the public in their day to day life trough road closures, interrupting sports and damage to homes and businesses.	Social & health impact of climate change Road closures Increased driving distances Sports impacted School closures Water supply interruptions	• Project Website • Social Media • Leaflets • Posters • Press Releases • Radio
Elected representatives	Delivery of central and local government targets Impact to local citizens and place	Adaptation central to resilient and successful society	• Meetings • Workshops • Presentations / Reports • Press
Housing organisations	Housing organisations need to adapt to changing climate by incorporating measures into new and existing plans.	Economic impact of climate change Family homes impacted Increased need for emergency accommodation	• Project Website • Social Media • Newsletter • Press Releases • Radio • Presentations • Research papers • Adaptation plans

Business & Technology organisations	These organisations need to adapt to manage the impact of climate change. This will help minimize loss of revenue through destruction of stock and closed business days.	Economic impact of climate change on businesses (loss of stock/business premises). Particularly for those who struggle to obtain insurance.	• Project Website • Social Media • Newsletter • Press Releases • Radio • Meetings
Agriculture & Forestry sector	Climate change has a huge impact on these sectors, including conditions required to grow crops, trees, erosion and manage animals.	Economic impact of climate change on farmers Impacts on habitats for growing trees	• Project Website • Social Media • Newsletter • Press Releases • Radio • Presentations • Research papers • Adaptation plans

Appendix 6 – Agenda and workshop group exercises – first meeting

An example

Duration: approximately 2 hours

Time	Agenda
10:30am	**Introduction**
10:35am	**Climate and Policy Update**
10:45am	**Adaptation Plan Scope and Working Group Terms of Reference**
10.50am	**Introduction to Adaptation Planning Cycle**
11.00am	**Group Exercise 1: Explore Current Climate Impact** Aim: Explore observed impacts and consequences of extreme weather to each service area.
11.30am	**Group Exercise 2: Identify Existing Adaptation Measures** Aim: Identify measures taken by service areas in response to both extreme weather (e.g. Storms) and gradual climatic change (e.g. sea level rise)
12.15pm	**Next Steps and Feedback**
12.30pm	**Close**

Workshop:

Group Exercise 1: Explore Current Climate Impact

Aim: Explore observed impacts and consequences of extreme weather to each service area.

Logistics: 3 tables, 3 facilitators, 4 templates for each group, 1 map per group, 1 flipchart, pens

- Introduce and explain the process, based on previous work
- Focus on observed impacts and consequences of Heatwaves (10 min) and Storms (10 min)
- Feedback session

Group Exercise 2: Identify Existing Adaptation Measures

Aim: Identify measures taken by service areas in response to both extreme weather (e.g. Storms) and gradual climatic change (e.g. sea level rise)

Logistics: 3 tables, 3 facilitators, 1 templates for each group, 1 map per group, 1 flipchart, pens

- Extreme Weather (20 min)
- Gradual Change (15 min)
- Feedback Session (10 min)

Appendix 7 – Draft Terms of Reference

An example

Derry City and Strabane District Council
Climate Adaptation Working Group
Terms of Reference

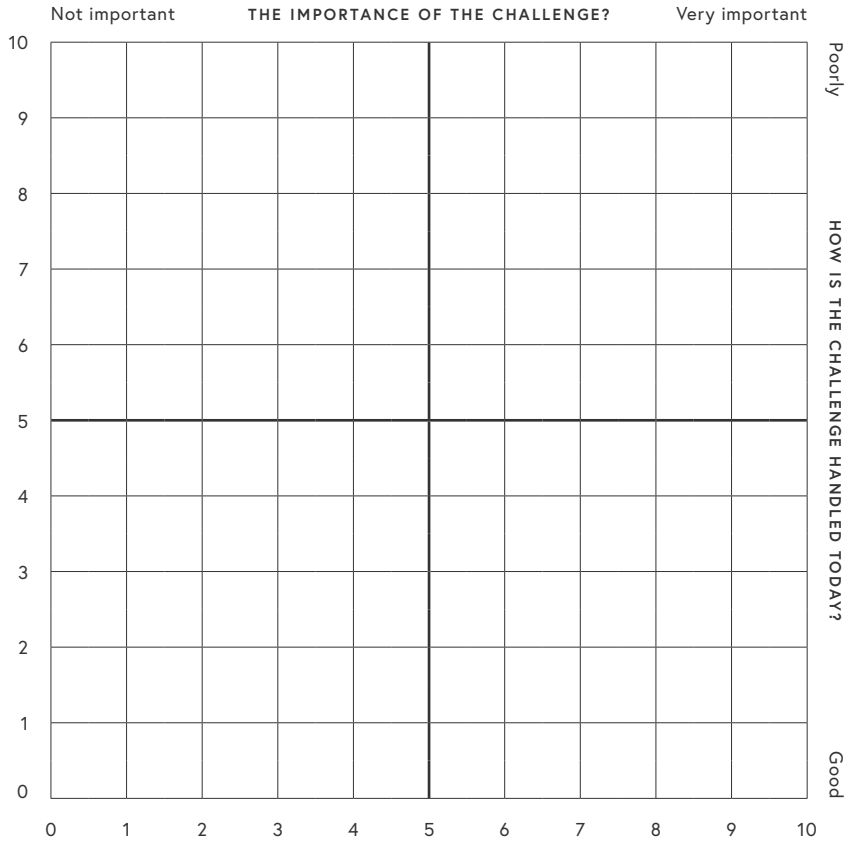
- Provide collaborative partnership to facilitate development and implementation of adaptation plan
- Ensuring a co-design approach to the adaptation plan
- Provide platform for knowledge and expertise to be applied to adaptation plan process and delivery
- Collate information from stakeholders regarding risks, vulnerabilities and opportunities
- Design shared actions to address challenges
- Agree the Adaptation Plan Vision
- Set up and facilitate sub sectoral meetings/discussion groups
- Review and finalise Adaptation Plan
- Responsible for adaptation plan implementation, monitoring and updates

Appendix 8 – Challenge diagram

An exercise

The challenge diagram helps the working group to create a common picture of the municipal today's most important climate challenges and its management

CLIMATE CHALLENGE (EXAMPLES)	Y HOW IS THE CHALLENGE HANDLED TODAY?	X HOW IMPORTANT IS THE CHALLENGE?
Cloudburst		
Flooding		



Climate Challenges (effects) for Challenge diagram

Changes in temperature and precipitation can lead to severe effects, such as impacts on groundwater, sea and lakes, but also on vegetation and soil moisture. Below are some climate effects listed and can function as an inspiration for the Challenge Diagram.

CLOUDBURST	FLOODING	LONG RAINS	LOW GROUNDWATER LEVELS
DRASTIC CHANGES IN GROUNDWATER LEVELS	CHANGED SNOW COVER	CHANGED ICE COVER	COLD SNAPS
HEAT WAVES	DROUGHT	SOIL MOISTURE	PROLONGED VEGETATION PERIOD
MORE DAYS WITH ZERO DEGREES	FIRES	LANDSLIDES	EROSION
WIND	THUNDER AND STORMS	OTHER	OTHER

Appendix 9 – Agenda and workshop content

An example

Time	Agenda
10:30am	Introduction
10:35am	Climate and Policy Update
10:45am	Adaptation Plan Scope and Working Group Terms of Reference
10.50am	Introduction to Adaptation Planning Cycle
11.00am	Group Exercise 1: Explore Current Climate Impact Aim: Explore observed impacts and consequences of extreme weather to each service area.
11.30am	Group Exercise 2: Identify Existing Adaptation Measures Aim: Identify measures taken by service areas in response to both extreme weather (e.g. Storms) and gradual climatic change (e.g. sea level rise)
12.15pm	Next Steps and Feedback
12.30pm	Close

Workshop:

Group Exercise 1: Explore Current Climate Impact

Aim: Explore observed impacts and consequences of extreme weather to each service area.

Logistics: depending on number of participants:
3 tables, 3 facilitators, 4 templates for each group 1 x map of local authority area per group, 1 flipchart, pens

- Reintroduce and explain the process
- Focus on observed impacts and consequences of e.g. Heatwaves (10 min) and Storms (10 min)
- Feedback session

Group Exercise 2: Identify Existing Adaptation Measures

Aim: Identify measures taken by service areas in response to both extreme weather (e.g. Storms) and gradual climatic change (e.g. sea level rise)

Logistics: depending on number of participants:
3 tables, 3 facilitators, 1 templates for each group, 1 x map per group, 1 flipchart, pens

- Extreme Weather (20 min)
- Gradual Change (15 min)

Appendix 10 – Climate impacts – Overview

An example and a template

CLIMATE EVENT CATEGORY	EXAMPLE	OBSERVED IMPACT (FUNCTION/SERVICES/STAFF & RESOURCES /COMMUNITY /BUSINESSES, ETC.)	
		WHAT WERE THE IDENTIFIED RISKS AND IMPACTS?	WHAT WERE THE CONSEQUENCES FROM THE IDENTIFIED RISKS?
TEMPERATURE (COLD SNAPS)	2010–2011 Ice and Snow caused freeze and thaw Temperatures: Nationwide of Northern Ireland 2018 Beast from the East: Derry Area and Nationwide Northern Ireland	FUNCTION AND SERVICES: • Transport and infrastructure in rural areas affected • Travel disruptions as routes cancelled and main roads affected • Bins not emptied • Grit stores were depleted • Airport closure • School closures	FUNCTION AND SERVICES: • Staff unable to get to work • Issues with flood deliveries due to weather
		STAFF & RESOURCES: • Grit stores were depleted	STAFF & RESOURCES: Cost to council: • Extra staff hours • Clean up of street by council
		COMMUNITY/BUSINESSES: All communities affected E.g. • Transport and infrastructure in rural areas affected • Bins not emptied • Travel disruptions	COMMUNITY/BUSINESSES: Clearing snow and gritting • Homes flooded due to thaw • Farming impacted Social perspective: • Positive community spirit (checking on neighbours)

CLIMATE EVENT CATEGORY	EXAMPLE	OBSERVED IMPACT (FUNCTION/SERVICES/STAFF & RESOURCES /COMMUNITY /BUSINESSES, ETC.)	
		WHAT WERE THE IDENTIFIED RISKS AND IMPACTS?	WHAT WERE THE CONSEQUENCES FROM THE IDENTIFIED RISKS?
TEMPERATURE (HEATWAVES)		FUNCTION AND SERVICES:	FUNCTION AND SERVICES:
		STAFF & RESOURCES:	STAFF & RESOURCES:
		COMMUNITY/BUSINESSES:	COMMUNITY/BUSINESSES:

CLIMATE EVENT CATEGORY	EXAMPLE	OBSERVED IMPACT (FUNCTION/SERVICES/STAFF & RESOURCES /COMMUNITY /BUSINESSES, ETC.)	
		WHAT WERE THE IDENTIFIED RISKS AND IMPACTS?	WHAT WERE THE CONSEQUENCES FROM THE IDENTIFIED RISKS?
STORMS		FUNCTION AND SERVICES:	FUNCTION AND SERVICES:
		STAFF & RESOURCES:	STAFF & RESOURCES:
		COMMUNITY/BUSINESSES:	COMMUNITY/BUSINESSES:

Appendix 11 – Past weather events and climate impact

An example

DATE	EXTREME WEATHER EVENT	DETAIL	LOCATION	IMPACTS TO DCSDC
17/08/2004	Heavy thunderstorms	Flooded buildings, tore manhole covers off and left motorists trapped in their cars.	Derry City Centre Victoria Road Foyle Road	
11/01/2005	Storm Power cuts as storms rage in NI	Severe storms with winds up to 90mph battered NI causing power cuts in many areas. winds with up to 90 mph. Roads blocked or flooded by fallen trees sporting fixtures cancelled and travel arrangements disrupted. A man died when a lorry was blown off the Foyle bridge	DCSDC Area and province wide	
16/08/2006	Flood Widespread chaos caused by floods	Torrential rain caused widespread flooding across NI, with rivers bursting their banks, landslides and roads cut off. 2 bridges collapsed and 37 major roads were shut down, including part of the M1 motorway and a train derailed	Province wide	
20/12/2010	Record low temperature recorded in Northern Ireland	Temperatures in NI dipped to their lowest on record with -18C recorded at Castlederg, County Tyrone 10 to 15cms of snow in some places, with freezing conditions making roads hazardous. Hundreds of schools closed. Travel delay Derry City airport closed until 1100GMT	Province wide	Derry City airport closed until 1100GMT
12/09/2011	Northern Ireland Hurricane Chaos	Homes left without power, ferries cancelled, and roads strewn with branches in a day of chaos caused by the storm that refused to die. Travel disruption to ferry and rail services Foyle bridge was closed to high sided vehicles with a 40 mph speed limit for smaller vehicles Winds of 74 mph recorded in Castlederg	Province wide	
08/09/2013	Temperature soars to 30C in Northern Ireland as heatwave is set to continue	The temperature soared to 30C in the west of Northern Ireland. 30C the highest mercury hit in 7 years. West of Northern Ireland 30 C recorded in Castlederg at 3pm	Province wide	
14/02/2014	Weather havoc: Triple-threat storm brings snow, rain and gales to UK and Ireland	Storms are again battering Northern Ireland Frost/ice/snow. Traffic ground to a standstill on the Glenshane pass. Ulster rugby match postponed	Province wide	
07/07/2015	Roads flooded after heavy rain in Londonderry. Heavy rain has caused flooding in part of county Londonderry and Derry City	Roads closed Homes damaged	The Bogside Creggan Foyle Road Strand Road villages including Claudy	

30/12/2015	Storm Frank leaves 2000 homes in NI without power	Weather warning in place as storm brings heavy rain and gales in from the west. Ferry cancellations motorist advised not to travel In Rosemount, a women trapped in car managed to free herself	Province Wide DCSDC area	
02/02/2016	Northern Ireland Weather warning as Storm Henry blows in with 80mph gales	Gusts of up to 75mph led to road closures due to fallen trees and the Foyle Bridge was closed to high sided vehicles	DCSDC area and province wide	
24/12/2016	Power has been restored to customers hit by Storm Barbara	Nearly 1000 customers were left without electricity. Heavy rain and gusts of wind up to 70mph	Northern Ireland	
22/08/2017	Northern Ireland floods: More than 100 people rescued	63% of the average August rainfall fell within an eight-to-nine-hour period Over 100 people had to be rescued by NIFRS who were trapped by flood water in their cars or homes. Derry City Airport Closed Bridge collapsed. Damage to cars The overall cost of repair work to date in the Derry & Strabane District Council area is approximately £2.5million. The total cost of the repair work is estimated to reach £10-11m.	Province wide The north west was worst affected particular DCSDC area and Donegal and Inishowen	The overall cost of repair work to date in the Derry & Strabane District Council area is approximately £2.5million.
14/06/18	Travel disruption as Storm Hector leaves trail of debris	Storm Hector brought strong winds across Northern Gusts in Belfast reached 60 miles per hour. Foyle Bridge in Londonderry has been closed, with drivers advised to find alternative routes. A fallen tree also caused lane blockages on the A6 between Derry and Dungiven.	The Northwest and regionally	Brooke Park closed for a few hours.
July 2018	Hosepipe ban Drought farmers experiencing problems with crops Grose fires	Highest temperatures experienced in Northern Ireland since 1995. Hose pipe ban in force.	Province wide	
19/9/18	Storm Ali	Foyle bridge closed due to adverse weather conditions. Claudy recycling centre has been closed due to the high winds. A man in Co Armagh was one of two people killed in Ireland with winds reaching almost 100mph. Around 27,000 electricity customers in Northern Ireland were without power after winds as high was 91mph were recorded at Killowenin Co Down — the strongest September gust since records began.	NI and ROI	Brooke Park Lesiure centre closed to public. Alternative facilities available at Templemore council park areas and cemeteries will remain closed

Appendix 12 – Existing measures

A template

ACTIONS TAKEN / MEASURE	CATEGORY	PERMANENT OR SHORT TERM MEASURE	ADDITIONAL SUPPORT / ACTIONS REQUIRED
EXTREME WEATHER Heatwave; Storms; Flooding; Cold Snap	(Operational Change, Policy, Plan development)	(State length of measure and the reason for this time period)	• What support do you require to implement this action e.g. other service areas/ statutory bodies, staff resource, monetary resource, data capture to inform this action… • Do you require additional support to continue this activity? E.g. policy change, data capture • What data could you gather that illustrates the frequency this type of event/or the cost of the responding action

ACTIONS TAKEN / MEASURE	CATEGORY	PERMANENT OR SHORT TERM MEASURE	ADDITIONAL SUPPORT / ACTIONS REQUIRED
GRADUAL CLIMATIC CHANGE Precipitation; Temperatures; Storms; Sea-level rise	(Operational Change, Policy, Plan development)	(State length of measure and the reason for this time period)	• What support do you require to implement this action e.g. other service areas/ statutory bodies, staff resource, monetary resource, data capture to inform this action… • Do you require additional support to continue this activity? E.g. policy change, data capture • What data could you gather that illustrates the frequency this type of event/or the cost of the responding action

Appendix 13 – Agenda workshop future vulnerabilities

An example

Agenda

- Introduction
- What we've learned so far… Short summary of current impacts identified at previous workshops
- What are we planning for? An overview of climate projections
- Group Exercise - Explore Future Vulnerability at 3 locations
- Next Steps and Feedback

Workshop Aim

Assess the potential impacts of projected climate changes
(extreme weather events and gradual climate changes)

Objectives

Review of Current Impacts
Present climate projections
Explore future vulnerability
Creation of Risk Register
Review of Adaptation Planning Process & Next Steps

Appendix 14 – Future vulnerabilities – risk register

Template

CLIMATE EFFECT:								
NEGATIVE IMPACTS								
SERVICE AREA	EVENTS	CONSEQUENCES FOR EACH EVENT IN A FUTURE CLIMATE	VULNERABLE GROUPS OR GEOGRAPHICAL AREAS	NEED FOR MORE DATA/ KNOWLEDGE?	AFFECTED SERVICE SECTORS	EXISTING RELEVANT PROJECTS/POLICY DOCUMENTS	EXISTING MEASURES	NOTES (ex. what info/data was used, what was discussed?)
Buildings								
Other constructions								
Surface runoff and sewage water systems								
Dams								
Agriculture								
Drinking water								
Electric power systems								
Fishery								
Flight transportations								
Contaminated soils								
Railroads								

Cultural heritage								
Ecosystems, biodiversity & other environmental goals								
Industry and possible pollutors								
Health								
Radio and TV (news) - communication to public								
Shipping								
Forestry								
Spread of deases								
Fresh water environment								
Telephone communication								
Tourism and outdoor activities								
Roads								
Air quality								
Other								

POSITIVE IMPACTS								
CONSEQUENCES	EVENTS	CONSEQUENCES FOR EACH EVENT IN A FUTURE CLIMATE	VULNERABLE GROUPS OR GEOGRAPHICAL AREAS	NEED FOR MORE DATA/ KNOWLEDGE?	AFFECTED SERVICE SECTORS	EXISTING RELEVANT PROJECTS/POLICY DOCUMENTS	EXISTING MEASURES	NOTES (ex. what info/data was used, what was discussed?)

Appendix 15 – Cost Benefit factsheet

A summary.

Why Develop a Business Case?

Climate change is already having both direct and indirect financial impacts on local authorities across the EU and the effects of projected climate impacts mean that these costs are likely to considerably increase, due to projected changes in patterns precipitation and storms, sea-level rise and changes in the frequency and intensity of extreme high/low temperatures. This factsheet provides a brief overview of the importance of building a business case for adaptation, and suggestions of what to consider when approaching such a process. Cost analyses and resource capacity will of course be different for each organisation.

Economic Assessment of Climate Change

Why is Cost-Benefit Analysis important?

Cost-Benefit Analysis is an important step in building a business case for climate action versus a 'do nothing' approach. As part of the climate adaptation planning cycle, it can assist the public sector in:

- Raising awareness of the implications of climate change for the public sector
- Promoting senior management buy-in
- Evaluating and ranking potential adaptation actions.

Moreover, cost-benefit analysis is increasingly effective when integrated with screening criteria including political, social and other considerations.[1]

Cost of Impacts across Europe

"Over the period 2000-2012, flooding in Ireland cost €749.75 million (in 2015 prices) in insurance claims. However, insured losses from floods generally represent a fraction of total (public and private) asset losses – in Europe, this has been estimated at about 30%[2]. If we assume a similar level of insurance penetration in Ireland, this suggests total asset losses (direct damages) from flooding in Ireland in recent years in the order of €192 million per year."[3]

This example is from the National Adaptation Framework in Ireland. By providing a figure for losses each year, this text communicates:

1. The scale of the issue (including some of the actors involved)
2. The business case for action
3. A baseline level of financial investment and payback on which to decide appropriate actions

[1] Food and Agriculture Organization of the United Nations (FAO) (2018) Cost-benefit analysis for climate change adaptation policies and investments in the agriculture sectors: www.fao.org/3/I8905EN/i8905en.pdf Accessed on 22/08/18

[2] Jongman et al. (2014) Increasing stress on disaster-risk finance due to large floods. Nature Climate Change, 4(4), p264-268.

[3] Department of Communications, Climate Action and Environment (2017) The National Adaptation Framework: www.dccae.gov.ie/documents/National%20Adaptation%20Framework.pdf, p39 Accessed on 22/08/18

The following examples also help to illustrate how the inclusion of financial figures communicates the scale of the issue. A cost-benefit analysis could use financial analysis to prioritise actions.

- "Developing Resilience to Climate Change in the Irish Transport Sector", highlights the significant financial costs caused by extreme rainfall and severely cold weather in 2009, estimated to have cost in excess of €225 million for repairs to national, regional and local roads.[4]
- Derry City and Strabane District Council in Northern Ireland reported that floods in August 2017 are estimated to have cost £1million, with £100,000 covered by insurance. Costs of airport closure were estimated at £300,000 for two days, and 600 homes were inspected by environmental health officers and other staff, at a cost of £387,000.[5]
- With summer temperatures of around 30 degrees Celsius across large parts of Sweden in July 2018, the Swedish Forest Agency estimates losses of over $100 million due to wildfires. Sweden will also have to cover the cost of the international aid such as water-bombing planes, fuel, salaries, food and accommodation for all the emergency services sent to help.[6]

These costs do not fully account for indirect impacts, such as transport and service interruptions, or health and wellbeing effects, for example, the effect on mental health or difficulty for the lowest socio-demographic groups to purchase flood insurance.

After Storm Desmond in 2015, flooding disruptions had significant impact on commuting costs in Co, Galway in Ireland. The extra time spent commuting is estimated to have cost €3.8 million (over a period of 17 working days), with a disproportionate impact affecting those with higher commuting costs and people on lower incomes. In areas particularly badly affected, this estimated extra cost amounted to 39% of earnings during the period of disruption.[7]

Methods for Costing the impacts of Climate Change

There are a wide range of methods to support the costing of climate change impacts and these methods generally involve:

1. Identifying and measuring (quantifying) your climate impacts in physical units
2. Converting these physical impacts into monetary values
3. Calculating the resource costs of your adaptation options
4. Weighing up the costs and benefits of the adaptation options, and choosing the preferred option, taking account of risks and uncertainties [8]

[4] Department of Communications, Climate Action and Environment (2017) The National Adaptation Framework: www.dccae.gov.ie/documents/National%20Adaptation%20Framework.pdf, p40. Accessed on 22/08/18

[5] CLIMATE NPA - Derry and Strabane District Council 17th April 2018 Workshop Report (2018)

[6] www.bloomberg.com/news/articles/2018-07-24/sweden-faces-extreme-fire-risk-across-the-country-as-costs-soar. Accessed on 22/08/18

[7] Department of Communications, Climate Action and Environment (2017) The National Adaptation Framework: www.dccae.gov.ie/documents/National%20Adaptation%20Framework.pdf, p40 Accessed on 22/08/18

[8] UKCIP (2004) Costing the Impacts of Climate Change in the UK: www.sfrpc.com/Climate%20Change/7.pdf, p5. Accessed on 22/08/18

How can I develop the Business Case for Adaptation?

Defining your Resource

The CLIMATE project offers three tiers of assessment, the first of which is the Situational Analysis tool, which will help you to define your capacity and budget for the basic steps towards planning for climate change, including the time or budget required for attendance at meetings. A case study of the resources used throughout the CLIMATE project in Derry and Strabane District Council (Northern Ireland) and Harnosand Municipality (Sweden) will be available through copies of their 'Municipality Adaptation Planning Resource Record'. It is important to note that a first step in creating a business case is to assess your resource for creating an adaptation plan.

Municipality Adaption Planning Resource Record

NAME: CATHY BURNS			
PLANNING PHASE	**ACTIVITY**	**TIME (HOURS)**	**RESOURCE (£/€)** (e.g. facilitation of meetings/production of support tools)
1. GET STARTED	Stakeholder Engagement		
	Workshop 1 – Introduction		
	Situational Analysis		
2. ASSES RISKS & VULNERABILITY	Climate Impact Profile		
	GIS Mapping		
	Workshop 2 – Explore current impact & identify existing adaptation measures		
	Screen for future impacts		
	Build Risk Register		
	Workshop 3 – Identify future vulnerability		

FIG. 1: Section of CLIMATE 'Municipality Adaption Planning Resource Record'

The Economic Assessment Process

Based on the experience of 'Environment and Sustainability practitioners', the UK Institute of Environmental Management and Assessment (IEMA) 'Climate Change Adaptation: Building the Business Case' report set out key principles for developing a business case for climate adaptation.

PRINCIPLES	LEARNING POINTS (FROM PRACTICE)
First understand your business and your context	Understand its purpose, culture and approach to decision making. Know what you are up to against. Map key stakeholders and decision making routes. Evaluate and develop your role to the business context (e.g. lead? Inspire? Support? – probably all three at different times)
Engage key internal stakeholders	Communicate with (and seek advice from) a range of critical functions such as finance, marketing, procurement, logistics and operations. Further develop your understanding of the organization and internal decision making, business drivers etc. Build awareness and support. Introduce the business relevance of climate change risks, opportunities and dependencies.
Use business relevant language	In discussions either avoid terms like "adaptation" or be careful to consistently translate. Use business language – profitability, disruption, staff welfare, client and customer service, liabilities, added value, winning business, loss of reputation, insurance costs, changing asset value, and constraints on future business.
Use direct business experience	Draw on recent experience within the business of extreme weather impacts – use win interest in early action (this can also help the visualization of future increased risks). Make sure that you present both the worst case scenario and the most likely outcome. Avoid the tendency to present just doom and gloom, and ensure that the work is solution focused.
Consider wider skill needs	Training may be valuable at early stage and can support internal scoping workshops. External expertise may be needed (e.g. flood risk)
Consider external input	Consider partner opportunities to support (e.g. sector / regional initiatives). Contribution from Advisory committee or stakeholders? Advise / requirements from clients?
Use projections and be transparent (e.g. on scenarios and uncertainty)	Do use formal climate change projections and remember businesses are used to dealing with uncertainty and imperfect information. Be transparent on the status of any projections and information. In addition feel confident to include high emission scenarios if you can justify (i.e. some view as basis for more credible projection given current failure on global emission targets).
Cost / quantify business impacts? (sufficient for decision)	Future climate related business costs are a challenge but some can be estimated – e.g. by assessing impacts of past weather events (money lost) and projecting forward. Other factors can be quantified (e.g. reputation may consider positive or negative media coverage in column inches). However avoid "over creative" accounting. The degree of work required for a decision should be considered with a balance of what can and can´t be quantified. Clearly state assumptions and dependencies.
Use existing processes (don´t reinvent the wheel)	Look to use existing business processes where they offer scope for action on climate change adaptation (e.g. procurement, risk management and business continuity, environmental management system, annual business planning etc).
Look for win wins (Trojan horse… piggy back)	Wider agendas offer scope for effective action on climate change adaptation. For example, heating and cooling (staff comfort) requirements in future premises as adaptive considerations within low carbon design and more energy efficient buildings. Adaptation can contribute to other business considerations underway (e.g. flexible and remote working of key personnel, or increased resilience as part of wider procurement and sustainable supply chain initiatives).
Opportunities and Comparative advantage	Investigate with colleagues opportunities for increased business (products and services). Also consider the comparative business advantage from resilience (see section 2.2).
Try things out	Do not under-estimate the importance of making a start. Trailing solutions on site with willing colleagues or business partners can be an important first step (demonstrators)

FIG. 2: 'Key Principles for Developing a Business Case for Climate Adaptation'[9]

[9] Institute of Environmental Management and Assessment (IEMA) (2013): 'Climate Change Adaptation: Building the Business Case' https://www.iema.net/assets/uploads/CCA%20Business%20Case%20Guidance%202013. Accessed on 19/11/18

What might an Adaptation Business Case contain?

ANNEX 1				
HIGH LEVEL BUSINESS CASE – EXAMPLE FRAMEWORK Important – The following is indicative only with considerations for how a high level business case might be structured on Climate Change Adaptation. It is deliberately in outline with prompts for consideration. No single framework can be advanced and all situations require tailored approach (research other recent approaches in your organization). Any written case is final stage of a well-planned process, should be tested in advance and some support should exist (have been developed). The case must fit intended audience – the following assumes high level decision makers with full agenda.	**OUR ADVANTAGE FROM CLIMATE CHANGE & SEVERE WEATHER** (bold title if convincing case – test it / don´t fall at first hurdle)			
	1. Purpose of report • Concise description, issues for consideration and the decision you are seeking, • Short description of process leading to report (where this has come from / why), • Other up front considerations? (e.g. you might clarify "adaptation" if confusion is likely with other recent "climate" report however, don´t add /make confusion).	**2. Brief facts on changing climate & weather** • Keep brief but make your point (range of sources available – refer to / use official and authoritative data and projections – Defra /Met Office / EA). ONLY if required address climate sceptics. As far as possible work on climate change and accepted fact and refer to robust projections now available (albeit with uncertainties and ranges). Remind them of any relevant organizational commitments… • Keep relevant to weather and climate effecting the business and avoid clutter (such as facts / details outside of operating regions and not relevant to business processes / products) • Ensure your information supports ¾ below (same point) • If helpful mention any particularly strong recent impacts on the business or on competitors (helpful to make this connection but don´t over state)	**3. Key climate risks and opportunities for our business (try wording in positive)** • Intro on process to evaluate these risks (be brief but also transparent) • If not addressed in 2, commence with recent weather events that impacted on the business • List business relevant climate and weather risks / opportunities you and colleagues have identified (short list only – full can be provided as annex / state available on request) • If helpful present summary "heat map" from deep red as risk through to deep green as opportunity – (However, absolutely keep simple and strategic / don´t add distractions and only use tested materials – This may be better as annex if at all) • Evidence your short list to direct business relevance – use estimated costs / benefits if possible (isn´t always). Be transparent on assumptions. Do use convincing qualitative evidence such as, internal opinions sought and secured on any relative business advantage from improved resilience (direct experience within business + information on competitors) • If supported – present and evidence risks as opportunities for business advantage	**4. Decision required/ recommendations (ensure all have some support/will at least maintain progress)** • Agreement that further investigate work be undertaken on "short list" (options)? OR • - Specific adaptation / resilience options to be costed for identified risk / opportunities? OR • Trial project required at one site / region? • Try to include recommendation for longer term (investigate of opportunity / risk)

FIG. 3: 'Example Framework for a High Level Business Case'[10]

[10] Institute of Environmental Management and Assessment (IEMA) (2013): 'Climate Change Adaptation: Building the Business Case' www.iema.net/assets/uploads/CCA%20Business%20Case%20Guidance%202013. Accessed on 19/11/18

Key Documents and Further Reading

Institute of Environmental Management and Assessment (IEMA) (2013)
'Climate Change Adaptation: Building the Business Case':

Available from:
https://www.iema.net/assets/uploads/CCA%20Business%20Case%20Guidance%202013

Appendix 16 – Step Three: Identify options, Evaluate and Prioritise / Workshop 4

An example (from Härnösand)

Overall aim: To recap what has been done previously (in WS 1, 2 in 2014 and in Jan 2019), To identify suitable and feasible actions that Härnösand can take, To discuss time-line for actions and To decide the layout and content for the adaptation plan.

Summary: This workshop focused mainly on **Step Three** (Identify options, Evaluate and Prioritise) in our best practice model (Adaptation Plan Support Tool). Based on earlier discussions (WS 3), the group started to look at possible actions that Härnösand can take but all participants was also given homework where everyone should look at possible actions, relevant for their service areas. In addition, to start the discussion, examples on actions was introduced from the regional climate adaptation plan and from the Municipality of Mariestad, which is an example of a really good adaptation plan. Each service area will also look at ongoing projects and see if any actions can be implemented in these potential projects. A summary with actions will be compiled by Daniel after the working group has made their consultations and a draft for the adaptation plan will be prepared before the next meeting in September/October 2019. Political anchoring is not likely to be accomplished this year but rather in the first half of 2020. Daniel (and co-workers) has gone through the offers for the cloudburst simulation model and decision will come shortly.

AGENDA	SOURCES/TOOLS	SUMMARY	NEXT STEPS
Summary of previous work and report from project meeting in June	PPT with Timeline	The best practice model and a summary what has been done to date was presented	Plan up-coming WS 5
Summary of ongoing work related to CAP	PPT with existing projects	Existing projects in the municipality are: Gerestabäcken, Risk- and vulnerability analysis, Masterplan (especially section with risk and actions in developed areas), Drone flights in relevant investigation areas, Support for ESRI, low water levels in the Gådeå system.	Continue to have meetings with relevant partners within the municipality where synergies can be found. Incorporate relevant ongoing work in the CAP
Vision, final climate adaptation plan	The Climate Adaptation Plan from Mariestad Municipality	A plan for the format for the Climate Adaptation Plan was presented using the plan from Mariestad as inspiration with a focus on actions	Incorporate symbols and summary matrix from Mariestad plan in Härnösand's plan and a subset of actions, relevant to Härnösand, will be used
Group exercise – Examples of actions and prioritisation	Mariestad CAP and regional CAP (Västernorrland) from 2018 Menti (webpage, using questions that all participants answered)	A large part of the WS time was allocated to going through and discussing examples of actions that could be relevant for Härnösand, using the Mariestad CAP and the information from the regional plan. Type of categories, time perspectives a gradation (1-4) for prioritisation was discussed and decided.	All participants will investigate further (e.g. having more workshops at the different service areas) to get more information on potential actions and report back to Daniel, he will then circulate the draft for more input. A CAP draft will be compiled after WS 5 but a structure will be presented at WS 5.
Group exercise – Responsibility and the need for more investigations/info.		There was a discussion on the importance of having an allocated budget for actions, a clear responsibility and a budget is necessary for implementing actions. A model for distributing funds within the different service areas at the municipality was discussed.	Introduce the model for how to work with CAP and following actions, which means implementing a cross-sectoral (horizontal) steering group, which in itself is one action in the CAP.
Need for more information (investigations)	Cloud burst strategy and heat wave guidelines from Sundsvall	There is a need for more detailed data for e.g. cloud burst events on local scale and an investigation has been commissioned. The offers were discussed.	Decision on which offer to go for and handing over the assignment.

The group decided on the following categorization of the actions:

1. Overall measures
2. Human wellbeing (life and health)
3. Natural environment (also includes water)
4. Built environment (includes cultural heritage, existing buildings and the exploitation of new buildings)
5. Technical supply systems
6. Industry and business (includes agriculture, forestry and tourism).

In addition, each adaptation measure is categorized in 4 time perspective;

1. Measures already taken into account in operations
2. Short term, until 2030 (with the possibility to specify – immediately, within 5, within 10 years)
3. Medium term 2030-2060
4. Long term 2060-2100. Each measure also has a responsible person as well as decision maker. All measures are focused on community planning as a first step in our adaptation planning, and the plan is to expand the working-group to include other service sectors in the organisation.

Appendix 17 – Adaptation Action Planning

A template

Action Category

Enabling – Building Adaptive Capacity (E- BAC)
Planning & Adaptation Action (PAA)

Cross Cutting Themes

THEME: GOVERNANCE & COLLABORATION							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Maintain effective governance and coordination to deliver and update the xxxx adaptation plan							
Continually review progress in developing a more resilient xxxxx through monitoring, prioritising, and reporting adaptation activity							
Develop external partnerships to deliver climate adaptation actions							
Influence relevant regional, national and sectoral policies and plans in relation to climate action							

THEME: COMMUNICATION & CAPACITY							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Develop communication delivery frameworks							
Enhance xxxx capacity to respond through increased awareness of climate change impacts and individual responsibilities towards building resilience							
EXTERNAL							
Raise awareness of the impacts of climate change encourage adaptation action							
Seek to deliver financial capacity to respond to climate change							

THEME: KNOWLEDGE & INFORMATION							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Improve understanding of the impacts and costs of severe weather events by collecting, updating, synthesising and sharing information							
Understand risk impact to assets & estates							
Develop an evidence base for climate change adaptation to enable adaptation actions that will have the greatest benefit across the municipality							
Undertake necessary research and benchmarking to maintain up to date climate data, research, and best practice							

Council Services & Function Delivery Themes

THEME: POLICY & PEOPLE							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Integrate climate change adaptation into new and existing policies & plans where appropriate							
Ensure safety and resilience of xxxx personnel to the effects of climate change							

THEME: ASSETS & ESTATES							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Improve resilience of xxxx property & estates to effects of climate change							
Ensure maintenance and asset management considers the impacts of climate change							

THEME: OPERATIONS & SERVICES							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Deliver effective emergency response to severe weather events							
Strengthen the resilience xxxx by mainstreaming adaptation considerations into operations and service delivery							

THEME: PLANNING AND CAPITAL DEVELOPMENT							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Ensure that all plans are future proofed and any opportunities maximised							
Ensure Council capital development and regeneration projects respond and adapt to climate change							

THEME: GREEN INFRASTRUCTURE							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Develop green infrastructure as preferred climate action response							
Ensure adaptive capacity and resilience of DCSDC GI Assets							

THEME: HERITAGE & CULTURE							
THEMATIC OBJECTIVES	ACTION	LEAD DEPARTMENT / TEAM	PARTNERS (INTERNAL & EXTERNAL)	TIMEFRAME			
				1-2YRS	2-3YRS	3-5YRS	5YRS+
Ensure protection of xxxx heritage assets							
Ensure protection of xxx collections							
Ensure resilience of xxxx cultural programmes							

Appendix 18 – Adaptation Plan Strategic Overview

A template and an example

Climate Adaptation Plan

Draft Vision, Aims & Objectives

TAKE URGENT ACTION TO TACKLE CLIMATE CHANGE AND IT'S IMPACTS

IMPROVING WELLBEING FOR ALL – BY TACKLING DISADVANTAGE AND DRIVING ECONOMIC GROWTH

A RESILIENT NORTHERN IRELAND WHICH WILL TAKE TIMELY AND WELL-INFORMED DECISIONS TO ADDRESS THE SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACTS OF CLIMATE CHANGE

A THRIVING, PROSPEROUS AND SUSTAINABLE CITY AND DISTRICT WITH EQUALITY OF OPPORTUNITY FOR ALL

GETTING 'OUR OWN HOUSE IN ORDER' LEADING BY EXAMPLE

VISION

DCSDC IS BETTER PREPARED AND MORE RESILIENT TO THE EFFECTS OF CLIMATE CHANGE CREATING A SAFE AND SUSTAINABLE REGION FOR ALL

AIMS

INCREASE CAPACITY

Increase capacity to respond to climate change ensuring resilience of our services, people, operations, assets and estate to the impacts of climate change.

RAISE AWARENESS

Raise awareness of the impacts of climate change across the City & District to deliver effective adaptation

LEAD BY EXAMPLE

Lead by example and work collaboratively to ensure resilience and deliver climate adaptation.

Action Plan Themes & Priorities

POLICY AND PEOPLE	ASSETS AND ESTATES	OPERATIONS AND SERVICES	PLANNING AND CAPITAL DEVELOPMENT	GREEN INFRASTRUCTURE	HERITAGE AND CULTURE
Mainstream climate adaptation into policies and plans and prepare Council staff for the effects of climate change.	Prepare for and address the impacts of climate change ensuring protection of Council assets, property and infrastructure.	Ensure continued service delivery and maintain Council operations and resilience to climate change.	Ensure future developments, planning policy and decisions prepare for the effects of climate change.	Prioritise Green Infrastructure for climate adaptation within Council estates.	Identify and address the impacts, risks and opportunities of climate change to local heritage assets, collections, cultural programs, festivals and events.

CROSS CUTTING THEMES

DELIVERY AND COLLABORATION	Ensure governance and resources of Derry City & Strabane District Council are adequate to deliver adaptation planning and actions, and work with others to strengthen the resilience of the North West region.
COMMUNICATION AND CAPACITY	Increase awareness and understanding of climate change contributing to the ability of Council and communities to adapt.
KNOWLEDGE AND INFORMATION	Ensure an evidenced understanding of climate change impacts and adaptation options.

Appendix 19 – List of contents for a drafted plan

An example

Draft Adaptation Plan Contents
Acknowledgements
Forward – Chief Executive
Executive Summary

1. Introduction
2. Regional Profile
3. What is Climate Change
4. Climate Data – Observations, Climate Impact Profile & Projections
5. Climate Action (Adaptation & Mitigation)
6. Case for Adaptation
7. Strategic Context
8. Roles & Responsibilities
9. Adaptation Planning Process
10. Situational Analysis – Current Adaptation Actions
11. Impact & Risks
12. Vision & Aims
13. Themes & Priorities
14. Action Plan
15. Implementation, Monitoring & Review

Bibliography
Appendices
Glossary

Appendix 20 – Workshop Adaptation vision, aims, themes and actions

An example

Group Exercise 1 – 10mins

Adaptation Plan Vision & Aims

- Do you agree with the Vision Statement?
- Do the aims reflect the main priorities for the adaptation plan?

Group Exercise 2 – 15mins

Themes & Priorities

- Do the themes adequately reflect the functions and services of Council?
- Do you agree with the thematic priorities?

Group Exercise 3 – 15mins

Risk Statements

- Are the statements accurate?
- Are any areas / risks missing?
- Is your department/team listed beside the relevant impact/ opportunity?
- *(Should your service area be listed beside any additional impact/opportunity?)*
- Are any existing controls missing?

Group Exercise 4 – 30mins

Action Planning

Cross Cutting Themes:

- Review the thematic objectives and actions listed under the cross cutting themes and discuss any potential changes for consideration

Specific Delivery Themes:

- Review the theme relevant to your service area
- Review the thematic objectives and discuss any potential changes for consideration
- Review actions and suggest any changes or additional actions that address the impacts/opportunities outlined in the risk register
- Are the relevant delivery leads/partners listed? (Lead department/team & Internal & external partners)