



Climate risk **management plan**

Towards a resilient business

Document control sheet

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Foreword from Adaptation Scotland

The global climate is changing with far-reaching implications for Scotland. Greenhouse gases already emitted into the atmosphere mean that some climate change is unavoidable regardless of future emissions. The investments and decisions we make today will influence how we live with climate change in the future.

Building resilience to the current and expected impacts of climate change through adaptation will be challenging for Scotland's businesses. But it is crucial to cope with threats, and to find innovative ways to exploit opportunities. In doing so, business continuity and profitability will be better protected and Scotland's economy, society and environment will be more resilient to change.

By taking action today we can create a more resilient Scotland. Adaptation Scotland is proud to support Scottish businesses in their journey towards climate resilience.

Anna Beswick

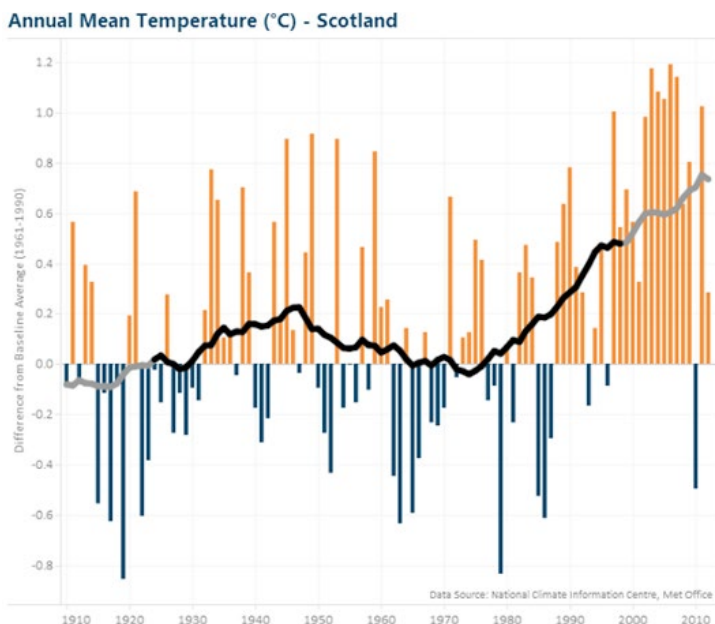
Manager, Adaptation Scotland

Foreword from

1. Getting started

1.1 WHAT IS ADAPTATION AND WHY DO WE NEED TO ADAPT?

Figure 1.1: Change in Scottish average temperature (1910–2012)



Climate change adaptation is defined as:

“The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities.”

1.2 DRIVERS FOR CLIMATE RESILIENCE

Legal requirements

Corporate Social Responsibility

Corporate social responsibility (CSR) is defined as “*the responsibility of enterprises for their impacts on society*”(1). To fully meet their social responsibility, enterprises “*should have in place a process to integrate social, environmental, ethical human rights and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders*”. Corporate social responsibility aims to drive innovation by creating products and services that are beneficial to society and businesses, while minimising negative impacts.



Understanding current vulnerabilities

We recognise the impacts that severe weather and climate change are already having on our business continuity, and understand that these may become more frequent in future. This provides a key driver for our business to take action.

1 Chartered Management Institute (2012) The 2012 Business Continuity Management Survey
2 SEPA (2013) National Flood Risk Assessment

1.3 BENEFITS OF MANAGING CLIMATE RISKS

A planned approach to the impacts of climate change is a priority for the following reasons:

1 European Commission, Sustainable and responsible business: Corporate Social Responsibility

1.4 CLIMATE RISK MANAGEMENT PLAN STRUCTURE

We are committed to building resilience through our climate risk management plan. The plan has four sections (Figure 1.1).

Figure 1.2 Climate risk management plan steps

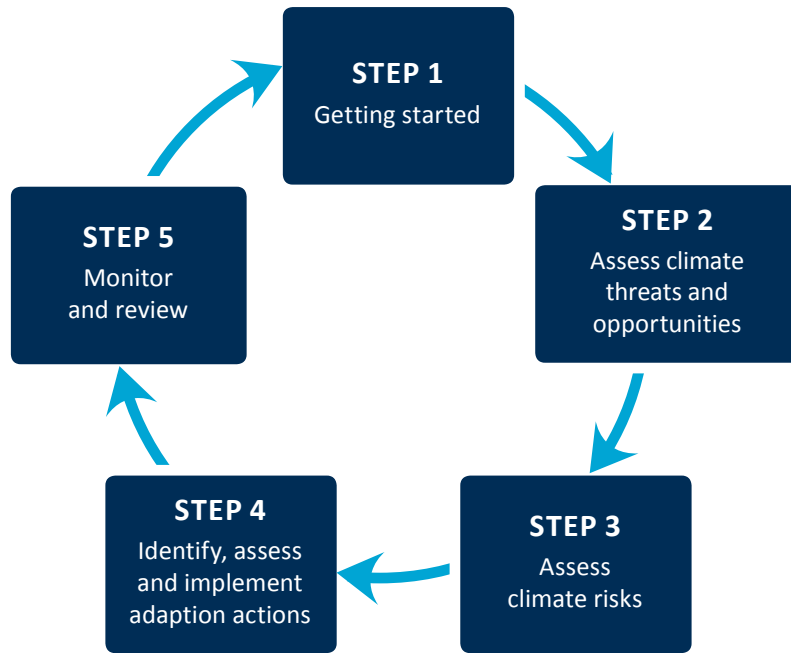


Table 1.1 Intended outcomes

Stage	Intended outcomes
1. Getting started / revise current plan	
2. Assess climate threats and opportunities	
3. Assess climate risks	
4. Identify, assess and implement actions	
5. Monitor and review	

1 Adaptation Scotland, *Adapting to Climate Change: A Guide for Businesses in Scotland*, 2010. Adaptation Scotland, *SME Info Notes: Helping small business meet its climate change challenge*, 2012.

2 UK Climate Impacts Programme (UKCIP), *Adaptation Wizard*, 2012. CLARA: *Climate Adaptation Resource for Advisors*, 2012. BACLIAT: *Business Areas Climate Assessment Tool*, 2012.

1.6 VISION AND GOALS

Targets

2. Identify climate threats and opportunities

This section explores vulnerability to current and future weather and climate.

Vulnerability is defined as:

“The degree to which a system is susceptible to or unable to cope with, adverse impacts of climate change, including climate variability and extremes.”

IPCC (2007)

2.1 CURRENT VULNERABILITY TO EXTREME WEATHER AND CLIMATE

The three key tasks during this stage are to:

1. identify recent, severe weather impacts;
2. explore current vulnerability to weather and climate; and
3. identify critical thresholds.

KEY FINDINGS

2.2 RECENT CLIMATE TRENDS AND PROJECTED CLIMATE CHANGE

Scotland’s climate is changing. Over the last few decades it has become warmer and wetter, with an increase in total rainfall (especially in winter) and heavy downpours. Severe weather events have already impacted many aspects of society such as buildings, health, agriculture, transport, water resources and energy demands.

We recognise that the projected average trends in Scottish climate poses potential threats and offers opportunities for our business. The key long-term climate change trends for Scotland are:

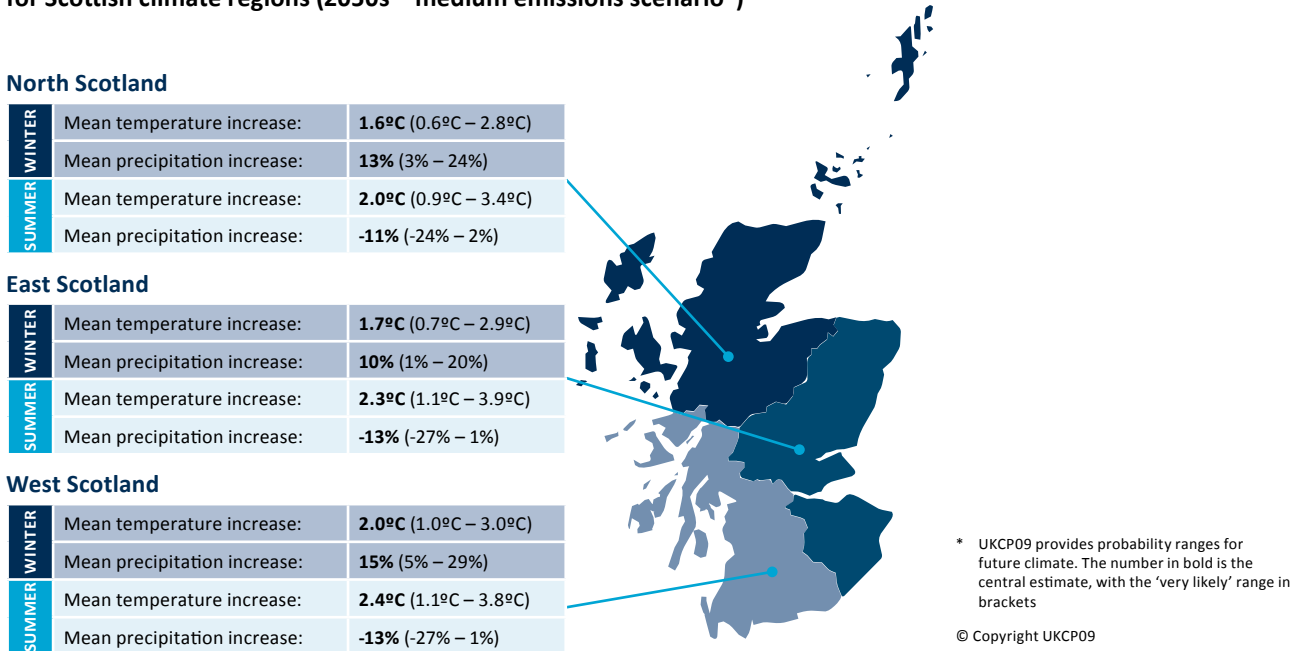
- warmer and drier average summer;
- milder and wetter average autumn and winter; and
- increasingly variable weather.

We can also expect to see:

- more frequent summer heat waves, extreme temperatures and drought;
- more frequent intense rainfall events and flooding;
- less frost and snowfall; and
- sea level rise.

These are average trends. There will always be regional variations in weather and climate.

Figure 2.1: Projected changes in summer and winter temperature and precipitation for Scottish climate regions (2050s – medium emissions scenario*)



3. Assess climate risks

This section looks at our future weather and climate-related risks. There are two stages:

1. Identify future threats and opportunities (risk analysis).
2. Score and prioritise current and future risks (risk evaluation).

3.1 IDENTIFYING FUTURE THREATS AND OPPORTUNITIES

1 UK Climate Impacts Programme (UKCIP), *BACLIAT: Business Areas Climate Assessment Tool*, 2012.
<http://www.ukcip.org.uk/bacليات/>

3.2 RISK ASSESSMENT

We undertook a qualitative risk assessment of threats to the company from current climate and projected future climate based on the information gathered in stages 3.1 and 3.2. The following approach to risk evaluation was used.

$$\text{Risk} = \text{Consequence} \times \text{Likelihood}$$

The following definitions of ‘consequence’ and ‘likelihood’ were used.

Consequence rating	Definition
Extreme	
High	
Medium	
Low	

Likelihood rating	Definition (occurrence per year)
Almost certain	
Likely	
Possible	
Unlikely	

Figure 3.1 Risk matrix

		Consequence			
		Low (1)	Medium (2)	High (3)	Extreme (4)
Consequence	Almost certain (4)				
	Likely (3)				
	Possible (2)				
	Unlikely (1)				

Evaluating current risk

We used the risk matrix firstly to evaluate each threat according to today’s climate, without considering the impact of controls. This gave an **inherent risk** scoring. We then identified existing organisational controls (including policies, procedures and actions) that would reduce the likelihood of an event occurring and/or reduce its consequences. Using this information we re-evaluated each threat to give a **residual risk** score.

Evaluating future risk

Next we re-evaluated the same threats to consider how future climate change would alter the likelihood and consequence. This gave a **future inherent risk**. The same controls for current risk were used to evaluate the **future residual risk** so that we could identify where gaps in our controls exist – the “adaptation gap”. The priority risks which we need to identify and implement further controls for are shown in Tables 3.1 and 3.2 below.

Recognising uncertainty

We identified a number of uncertainties facing the business which make it hard to assess risks and identify adaptation options. A flexible plan that is reviewed periodically should allow the following uncertainties to be integrated into future vulnerability and risk assessments, and allow appropriate adaptation options to be identified:

- What will our future market/customer base look like?
- What technology will be available in future?
- What IT systems will we be using?
- How will our energy be supplied (e.g. local heating/power systems)?
- What level of global warming will we be adapting to?

In light of these uncertainties, the priority is to develop a flexible plan and build institutional capacity through awareness raising and research. For more information on planned actions, see Section 4.

Table 3.1 Summary of priority climate change risks

Current risk assessment (2013)			Risk management	Future risk assessment (2050s)	
Hazard type	Risk identification	Current residual risk rating	Controls	Future residual risk rating	Further action needed

See Appendix E for the full risk assessment.

Table 3.1 continued

Current risk assessment (2013)			Risk management	Future risk assessment (2050s)	
Hazard type	Risk identification	Current residual risk rating	Controls	Future residual risk rating	Further action needed

Table 3.2 Summary of key opportunities

Opportunity			Solution	
Opportunity category	Opportunity	Likelihood	Action needed	Timescale

4. Identify, assess and implement adaptation actions

The purpose of this plan is to help us manage our climate risks to an acceptable level, and enable us to exploit any positive opportunities that may arise. We have put in place actions in response to our priority risks. Actions fall into two broad categories:

- **Building adaptive capacity** is about developing institutional capacity to respond to climate change (compiling information; creating the necessary regulatory, institutional and managerial conditions; developing skills and training).
- **Delivering adaptation actions** involves taking practical actions to reduce vulnerability to climate risks, or to exploit positive opportunities.

We have identified actions that we are already taking or plan to take in response to the priority risks identified in Section 3 (see Table 4.1 and Appendix D). For each action, a template (Appendix A) will be completed and reviewed during progress meetings.

Table 4.1 Action, owner, measure of success, completion date and progress

Action	Owner	Measure of success	Completion date	Progress (complete or ongoing)
Stage 1: Getting started				
Stage 2: Assess climate threats and opportunities				

Action	Owner	Measure of success	Completion date	Progress (complete or ongoing)
Stage 3: Assess climate risks				
Stage 4: Identify, assess and implement adaptation actions				
Stage 5: Monitor and review				

5. Monitor and Review

5.1 PURPOSE OF MONITORING AND REVIEW

5.2 WHAT ARE WE MONITORING?

5.3 PROGRESS REVIEW FINDINGS

5.4 COMMUNICATING PROGRESS

FURTHER SUPPORT

Adaptation Scotland, *Adapting to Climate Change: A Guide for Businesses in Scotland*, 2010.

<http://www.adaptationscotland.org.uk/3/82/0/Adapting-to-Climate-Change--A-Guide-for-Businesses-in-Scotland.aspx>;

Adaptation Scotland, *SME Info Notes: Helping small business meet its climate change challenge*, 2012. [http://](http://www.adaptationscotland.org.uk/3/99/0/SME-Info-Notes--Helping-small-business-meet-its-climate-change-challenge.aspx)

www.adaptationscotland.org.uk/3/99/0/SME-Info-Notes--Helping-small-business-meet-its-climate-change-challenge.aspx

BSI, *Climate change adaptation – adapting to climate risks using ISO 9001, ISO 14001, BS 25999 and BS 31100*, 2011 <http://shop.bsigroup.com/en/ProductDetail/?pid=00000000030213386>

Business in the Community North East: *Business Resilience Health Check*

<http://www.businessresiliencehealthcheck.co.uk/>

Institute of Environmental Management and Assessment (IEMA), *Climate Change Adaptation: Building the Business Case: Guidance for environment and sustainability practitioners*, 2013.

<https://www.iema.net/readingroom>

UK Climate Impacts Programme (UKCIP), *Adaptation Wizard*, 2012. <http://www.ukcip.org.uk/wizard/>

UK Climate Impacts Programme (UKCIP), *BACLIAT: Business Areas Climate Assessment Tool*, 2012.

<http://www.ukcip.org.uk/bacليات/>

West Midlands Climate Adaptation Partnership: *Weathering the Storm – Saving and Making Money in a Changing Climate. A Practical Guide for Small Businesses in the West Midlands*

http://www.sustainabilitywestmidlands.org.uk/media/resources/0740071001318590163;Weathering_the_storm_-saving_and_making_money_in_a_changing_climate,Oct_2011pdf.pdf

Appendix A: Action plan template

Action	
Reference:	
Owner (person)	
Department	
Description	
Benefits	
Resources	
Ensuring Success	
Measuring Success	
Timing	
Notes	

Appendix C: Table 2 – Future weather and climate-related threats and opportunities

	Threats (negative impacts)	Opportunities (positive impacts)
Finance		
Premises		
People		
Logistics		
Process		
Markets		

Appendix D:

Table 3 – Risk assessment

10	Hazard	Impact	Consequences for organisation	2013			Mitigants and Controls	2013				2050			Mitigants & Controls	2050		
				Inherent risk				Residual risk				Inherent risk				Residual risk		
				Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		

Appendix D continued:

Table 4 – Action plan

Hazard	Actions to manage future risks	Reference	Person responsible	Timescales	Progress
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



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