

Case Study: Celtic Connections

A framework for cultural SMEs to assess the risks and opportunities of climate change



This report was written by: University of Edinburgh

On behalf of: Creative Carbon Scotland

Published: April 2019



Table of Contents

EXECUTIVE SUMMARY	1
1. INTRODUCTION	3
FRAMEWORK	4
2. COMPANY OVERVIEW	5
2.1 BACKGROUND	5
2.2 LOCATION	5
2.3 OPERATIONS	6
2.4 TARGET MARKET	6
3. POLICY CONTEXT	7
3.1 SCOTLAND	7
3.2 GLASGOW	7
4. LOCAL CLIMATE ASSESSMENT	8
4.1 CURRENT CLIMATE	8
4.2 PAST CLIMATE	8
4.3 FUTURE PROJECTIONS	9
5. RISKS	10
5.1 REGULATORY	10
5.2 PHYSICAL	11
5.3 REPUTATIONAL	13
5.4 FINANCIAL	13
5.5 CULTURAL	13
6. OPPORTUNITIES	14
6.1 MARKETS AND SERVICES	14
6.2 TRANSPORT	14
6.3 REPUTATIONAL	14
6.4 CULTURAL	15
7. CONCLUSION	ERROR! BOOKMARK NOT DEFINED.
REFERENCES	17

List of Figures

Figure 1 Framework for Cultural SMEs to assess risks and opportunities from climate change.	1
Figure 2 Framework for Cultural SMEs to assess risks and opportunities from climate change.	4
Figure 3 Map of the UK showing the location of Glasgow	5
Figure 4 Types of severe weather events in Glasgow between 1999 – 2009 (Glasgow City Council, 2016)	8
Figure 5 Precipitation (top) and temperature (bottom) projections for the River Clyde basin until 2100. Based on UKCP09	9
Figure 6 Topographical map of Glasgow City Centre with regular festival event spaces highlighted..	12

List of Tables

Table 1 Summary of UK, Scotland, and Glasgow carbon (CO ₂) and greenhouse gas (GHG) targets ..	7
Table 2 Physical risks from climate change and main areas of impact.....	11

Executive Summary

Climate change is a critical issue which necessitates urgent action across all levels of society from governments, businesses and individuals. While climate change presents many risks, there are also benefits as adapting to climate change can allow organisations to seize new opportunities and become more efficient. This report has been undertaken on behalf of Creative Carbon Scotland and provides a framework as seen in Figure 1 below, which cultural Small to Medium Sized enterprises (SMEs) can use to assess the risks and opportunities presented by climate change. In line with the brief given by CCS, Glasgow based festival Celtic Connections has been used as a case study to exemplify how the framework can be used.

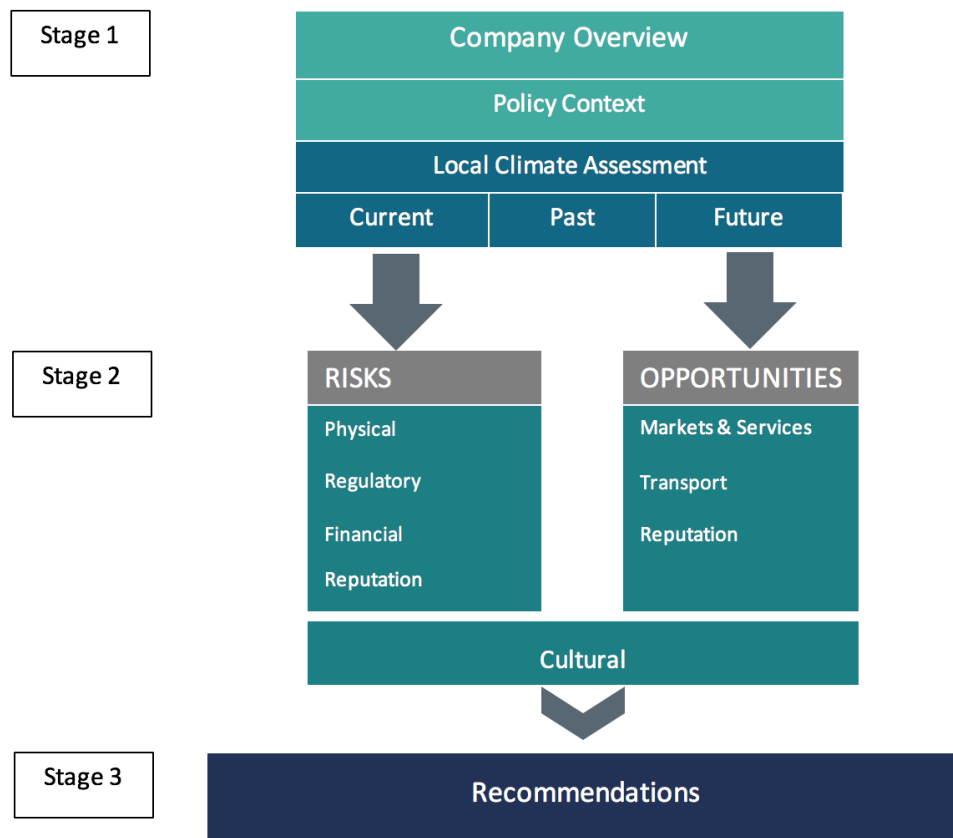


Figure 1 Framework for Cultural SMEs to assess risks and opportunities from climate change.

Celtic Connections is one of the largest music festivals in Europe and is a celebration of traditional Celtic music. During the festival, more than 300 concerts, talks, free events, late night sessions and workshops take place attracting visitors and artists from around the world. There is also an emphasis on award winning educational program offering free concerts and event to school children. Celtic Connections is part of the registered charity Glasgow Life, which is an arm’s length organisation from Glasgow City Council.

Relevant policies and legislation which could have an impact on Celtic Connections operations include the Climate Change Act 2009, the Climate Change Bill and the Glasgow Climate Adaptation Strategy and Action Plan. These policies propose targets to decarbonise the electricity, heat, and transport

sectors to ultimately making Glasgow carbon neutral by 2037. Consequently, cultural SMEs will have to adapt to both the impacts of climate change and the impacts of climate mitigation measures.

Although changes in climate may not pose a risk to Celtic Connections, the probability of increased frequency and intensity of extreme weather event poses a large threat. Glasgow is particularly vulnerable to extreme precipitation and strong winds which cause flooding and damages to buildings and infrastructure.

The main risks posed to Celtic Connections from climate change are as follows:

Regulatory: More stringent government adaptation and mitigation policies regulations could impact on costs of transport and energy. Uncertainty over what the outcome or impact will be of the Glasgow council Emergency Working Group.

Physical: An increase in the number of, and severity of extreme weather events could impact transport to the festival for customers and staff, damage buildings, create a flood risk and increase insurance premiums.

Reputational: Cancellations due to weather events or artists being unable to travel could give the festival a negative reputation which would lead to reduction in ticket sales and the long-term commercial viability of the festival.

Financial: Forced cancellations could have large financial implications as the festival would need to refund tickets. Increasingly insurance companies are analyzing business adaptation strategies to ensure climate change impacts have been considered and minimised.

Cultural: The festival boosts Glasgow's music scene and is also crucial in connecting Celtic artists internationally, as well as introducing young people to Celtic music. Without the festival there would be a large gap in encouraging and increasing participation in traditional Celtic.

The main opportunities for Celtic Connections are as follows:

Markets and Services: Build on local market for audience, continue youth engagement, encourage local artists. Celtic Connections should also consider streaming events and workshops.

Transport: Encourage use of public transport and carpooling.

Reputational: Opportunity to lead the way in urban music festival sustainability and climate leadership.

Cultural: Festival can have a positive influence on people's attitudes towards climate change.

Overall recommendations created from the risks and opportunities are as follows:

- Ensure Celtic Connections has knowledge and compliance with climate change regulations.
- Create an adaptation plan which considers possibility of increased frequency and severity of extreme weather events. This adaptation plan will ensure financial, reputational and cultural risks are minimised.
- Focus on building local audience and nurturing local artists.
- Allow events and workshops to be streamed.
- Aim to be a leader in Green Festivals and obtain a Greener Festival Award.
- Use cultural opportunity to partner with 'school strike' students to create Celtic protest songs and music. Also raise awareness of climate change through Showcase Scotland initiatives and partnerships.

1. Introduction

With the recent 1.5°C Special Report¹ by the International Panel on Climate Change (IPCC) highlighting the potential impacts and risks of climate change, it is imperative for businesses to understand the impact this could have on their organisations. Climate change should be considered not only as a risk, but also as an opportunity, as highlighted in The Stern Report² (2007) which stated that adapting to climate change can provide new opportunities, and also increase overall efficiency from ensuring compliance with climate change policy.

This case study will highlight the impact of climate change on the Celtic Connections festival and has been undertaken on behalf of Creative Carbon Scotland (CCS). Within the brief given by CCS the risks and opportunities from the impacts of climate change had to be identified, as well the impacts of local mitigation actions and policies. Through discussions with CCS the main aim of this report has developed to be the creation of a framework that small to medium-sized enterprises (SMEs) in the cultural sector can use to analyse the risks and opportunities presented by climate change.

This report will use the case study of the Celtic Connections Festival to work through the developed framework as set out in Figure 2, in line with the framework the report will use the following structure:

Stage 1.

Background details will be given on the Celtic Connections Festival to provide an overview of operations, markets and geographical location. Current local policy and legislation around climate change will also be analysed to highlight any potential legislative risks. Then, the current and projected climate as well as extreme weather events are investigated to highlight vulnerabilities to Celtic Connections operations in Glasgow.

Stage 2.

The information from stage one will be analysed in order to determine the main risks and opportunities presented from climate change. Within this stage cultural risks and opportunities are also highlighted. Although little research has been done specifically on cultural SMEs in relation to climate change adaptation, these organisations have a unique opportunity through their work to not only adapt, but to raise awareness and encourage positive behavioural change. The importance of culture in tackling climate change has been highlighted by scholars such as Andrew Hoffman³, and is important to be included while considering cultural SMEs.

Stage 3.

Will give a summary of recommendations.

This case study will finish with a short conclusion and overall will exemplify how the framework can be used by CCS and applied to other cultural SMEs.

Framework

The framework contained within this report was developed using the following sources:

- The Task Force on Climate Related Financial Disclosure Report (2017) gave the indication of the main risks and opportunities which should be considered by businesses.⁴
- Information from Adaptation Scotland’s online toolkits informed the areas of impacts which should be considered, particularly within the risk section of the report.⁵
- UKCIP online tool for adaptation highlighted the importance of analysing current and future vulnerabilities, as well as adaptation options which in the framework are given under recommendations.⁶

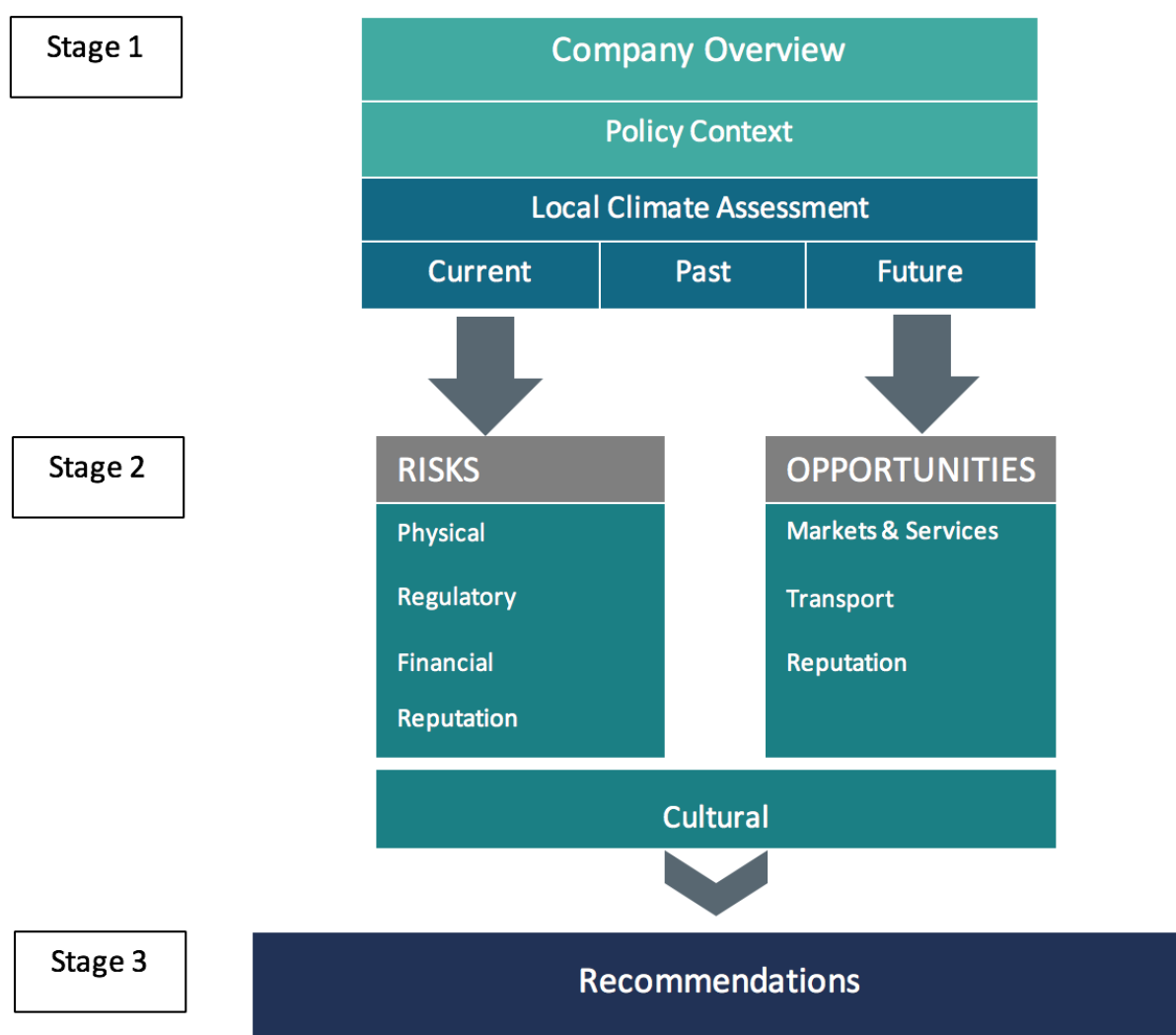


Figure 2 Framework for Cultural SMEs to assess risks and opportunities from climate change.

2. Company Overview

2.1 Background

The first Celtic Connections festival was held in 1994 at The Glasgow Royal Concert Hall, with over 35,000 people attending the event from all around the world. Since then, the festival has been held in Glasgow every January, with the most recent event in 2019 attracting over 130,000 people. The festival is a celebration of traditional Scottish Celtic music, and it's connection to cultures across the world. During the festival, more than 300 concerts, talks, free events, late night sessions and workshops take place, and although there is a focus on Celtic music other styles such as international folk, roots and world music artists are also shared. The festival helps to boost Scotland's culture, economy and tourism, especially in the month of January which commonly has poor weather, less events and visitors.⁷

2.2 Location

Glasgow is Scotland's largest city and fourth largest in the UK, in terms of population with approximately 610,000 citizens in 2016.⁸ It is located in the central west area of Scotland as can be seen in Figure 3.⁹ The city has many transport links with motorways, a railway systems and an airport.



Figure 3 Map of the UK showing the location of Glasgow.⁹

2.3 Operations

Celtic Connections is part of the registered charity Glasgow Life, which is an arm's length organisation from Glasgow City Council. The festival is held in venues all across Glasgow (e.g. the Royal Concert Hall, the King's Theatre, the Fruitmarket) meaning they can stage multiple events each night. Another part of the festival, held during the day, is the award winning educational programme. During this school children attend tutorials and concerts experiencing live music of a variety of genres, ranging from traditional Burns Night offerings, spiritual and sacred music, blues, and of course traditional Scottish music. A further element is the workshops for children and adults such as song writing or instrument tutorials from world-class musicians.⁷

Celtic Connections has a number of commercial partnerships, for example, with media organisations such as The BBC, The Times, and The Sunday Times. They also have a transport partnership with ScotRail. Furthermore, they also partner with businesses such as Holiday Inn and Glasgow Dine, offering deals and discounts for their customers.

The festival makes revenue from the 300+ events put on over the course of the festival. It also receives government funding from Creative Scotland and last year received around £180,000.¹⁰

2.4 Target Market

The main target market for Celtic Connection is people with an interest in culture and music. Geographically there is a focus on the 1.75 million people living in the Glasgow City Region, but also people abroad with an interest in Celtic music or a connection to Scotland. Within the UK the festival targets the AB, C1 and C2 socioeconomic grades that make up an estimated 75% of the population. These grades account for people in managerial, administrative, professional or clerical job roles.¹¹

3. Policy Context

3.1 Scotland

Glasgow City Region, which hosts Celtic Connections, adheres to a number of national and local climate regulations. The UK government’s Climate Change Act 2008 sets out the framework for mitigation and adaptation strategies in devolved administrations such as Scotland.¹² The Scottish government has enacted this into Scottish law through the Climate Change (Scotland) Act 2009 (hereafter “the Act”). Under the Act, the Scottish Climate Change Adaptation Programme (SCCAP) was developed to increase Scotland’s resilience to the impacts of climate change in three main areas: (i) natural environment (ii) buildings and infrastructure (iii) society.¹³ The second statutory five-year SCCAP is set to be released later this year.¹⁴

In order to achieve the emission reduction targets presented in the Act, the Scottish Climate Change Delivery Plan aims to decarbonize electricity generation by 2030, decarbonize the heat sector by 2050, nearly decarbonize road transport by 2050, and develop a comprehensive approach to tackling emissions from land use.¹⁵ A new Climate Change Bill is currently going through the Scottish Parliament and proposes increasing Scotland’s emission reduction target for 2050 to 90% from 1990 levels.¹⁶ Public sector bodies such as the Glasgow City Council are required to comply with the national government’s guidelines.¹⁷

3.2 Glasgow

Glasgow City Council has developed several initiatives to address climate change. Glasgow’s Sustainable Energy Action Plan (SEAP) sets out to reduce the city’s emissions by 30% by 2020 from 2006 levels.¹⁸ The Energy and Carbon Masterplan led by Sustainable Glasgow provides 33 actions to achieve this target.¹⁸ Actions focus on reducing energy consumption and improving energy efficiency.

The Climate Ready Clyde Initiative funded by the Scottish government and 12 member organisations aims to ensure the Glasgow City Region is resilient against the impacts of climate change. The Initiative’s main objective is to lead the development of a Climate Adaptation Strategy and Action Plan.¹⁹ In the 2018 Climate Risks and Opportunities Report, Climate Ready Clyde identified providing advice and support to SMEs as an area that requires further action.

Glasgow Councils Climate Emergency Working Group was created in 2018 in response to a Special Report by the UN Intergovernmental Panel on Climate Change (IPCC).²⁰ Their main role is to accelerate action and provide more demanding targets for the region.²⁰ Specifically, the Working Group is tasked with finding ways to help Glasgow become carbon neutral by 2037.²⁰ Recommendations are currently being developed by the Working Group to present to the Carbon Reduction Policy Committee by August.²⁰ A summary of national and sub-national emission targets can be found in Table 1 below.

Table 1 Summary of UK, Scotland, and Glasgow carbon (CO₂) and greenhouse gas (GHG) targets.¹⁵

Source	Baseline year	Target 2020	Target 2030	Target 2050
Climate Change Act (UK), 2008	1990	34% CO ₂	—	80% CO ₂
Climate Change (Scotland) Act, 2009	1990	42% GHG	50% GHG	90% GHG
SEAP (Glasgow), 2010	2006	30% CO ₂	—	—

4. Local Climate Assessment

4.1 Current Climate

To be able to understand the future impacts of climate change on Glasgow it is imperative to look at the past and current climate. The distinction between climate and weather is key to the climate change debate. Since climate is defined as the 30-year average of weather, it is primarily based on long-term averages.²¹ In contrast, weather refers to the short-term changes in temperature, precipitation and other climatic variables.²¹

Glasgow's climate is classified as oceanic, with milder winters and cooler summers compared to other places located at similar latitudes.²² Currently, the average temperature in the Glasgow Region is 8.8°C with annual precipitation of 1124.4mm.²² Most rainfall is observed between October and January, with the least occurring between April and June.²² The warmest months on average tend to be from June to August while the coldest are from November to February.²²

4.2 Past Climate

The following climatic changes have been observed in Scotland compared to a 1970s baseline:

- a 21% increase in average rainfall;
- an increase in average maximum temperatures by 1.21°C;
- an increase in the number of heat waves by 6 days;
- a decrease in the number of snow days by 32%.²³

An important indicator of future climate-induced risks and vulnerabilities is past extreme events. According to a study performed by Glasgow City Council, the number of extreme weather events between 1999 and 2009 was 161, with peaks of extreme weather events (over 20) in 2002, 2003 and 2008²³. As seen in Figure 4, these events predominantly included heavy rains and strong winds. The most common impacts of those extreme weather events were observed in damage to infrastructure (50.5%), damage to buildings (11.8%) and floods (9.1%). Positive impacts were associated with 9 out of the 161 extreme weather events (4.8%). Although more extreme weather events have occurred in Glasgow since 2009, the above-mentioned trends in terms of type and impact of the events are still observed.²⁴

Of particular importance to Celtic Connections is the increase in winter precipitation and heavy downpours in the Glasgow area²⁵. The most recent major extreme weather event in Glasgow was the 'Beast from the East' in March 2018. The unexpected heavy snow lead to airport and road closures.²⁶

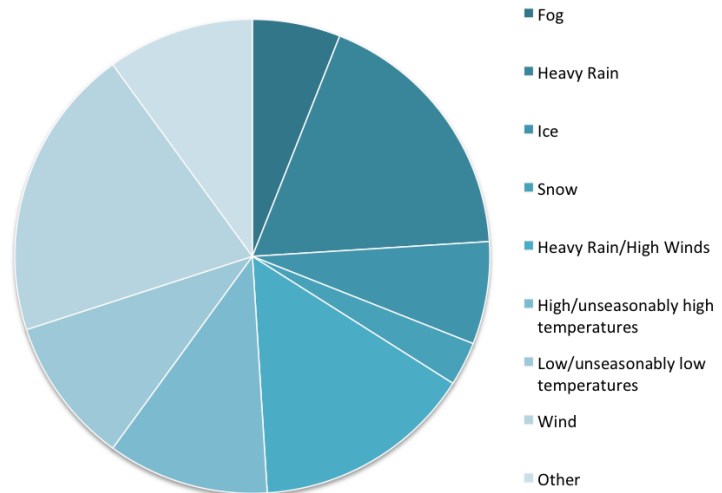


Figure 4 Types of severe weather events in Glasgow between 1999 – 2009 (Glasgow City Council, 2016).²⁴

4.3 Future Projections

Winters in central Scotland are projected to be up to 12% wetter and summers up to 40% drier by the end of the century under a high emission scenario.²⁷ Additionally, temperatures are projected to increase by up to 4.8°C in summer and as much as 4.5°C in winter.²⁷ Climate projections, which look specifically at Glasgow and the River Clyde basin also indicate an increase in winter and decrease in summer precipitation, with the percentage change varying between months - see Figure 5.²⁸ In contrast to precipitation, temperature shows a consistently increasing trend throughout the whole year - see Figure 5.²⁸ In the context of Glasgow, one of the most important and potentially damaging climate impacts is more frequent and severe flooding.²⁸ Increasing precipitation throughout the winter months will see a greater discharge throughout the length of the Clyde and put a much greater strain on flood defences. Sustained investment will be required to prepare for this eventuality.

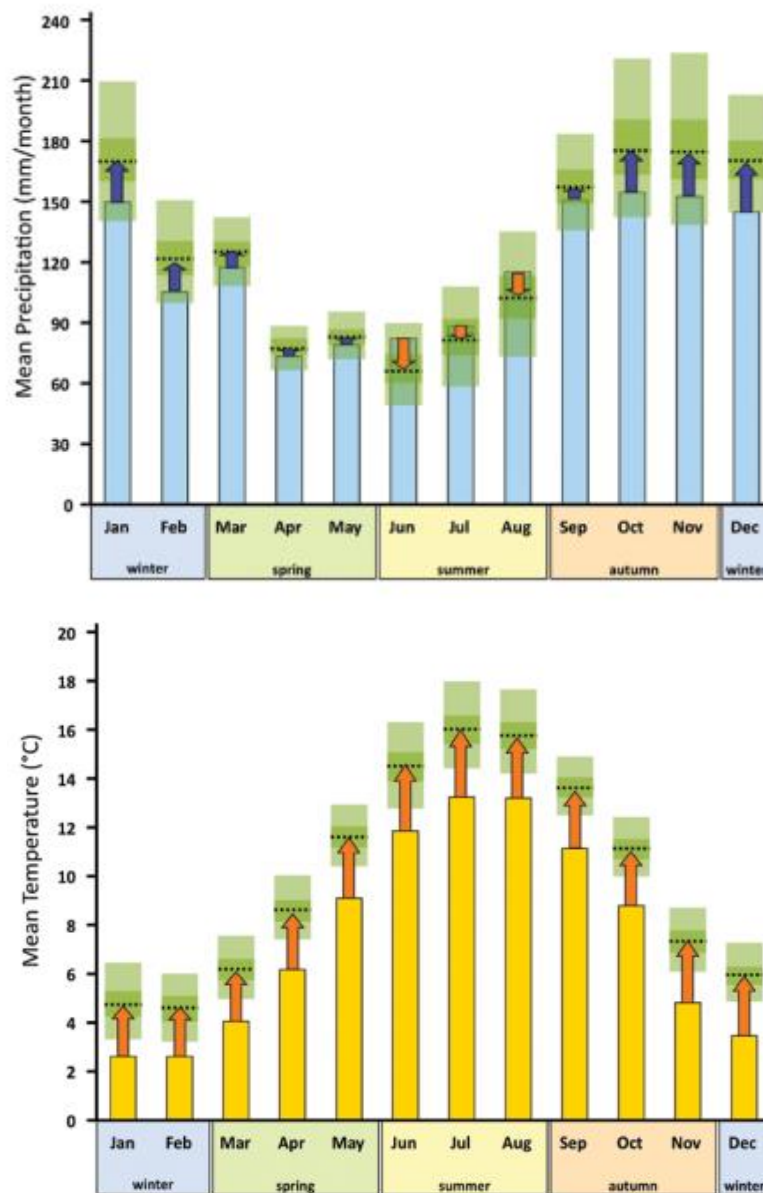


Figure 5 Precipitation (top) and temperature (bottom) projections for the River Clyde basin until 2100. Based on UKCP09.²⁸

5. Risks

The following section will identify and analyze the main risks facing Celtic Connections as a result of climate change. Using this information will enable a robust adaptation strategy to inform actions that can be taken to reduce vulnerabilities.

5.1 Regulatory

Emerging climate-related regulations in the UK, Scotland, and Glasgow, may have direct and indirect consequences on business operations. As mentioned in Section 3, national and sub-national governments are increasingly adopting more stringent adaptation and mitigation policies. These regulatory developments are likely to affect the services provided by Celtic Connections through travel expenses, energy usage, waste reduction, and government-led initiatives. Therefore, adaptation to the effects of these policies should be considered by the company.

Regulations are likely to increase travel expenses. The aviation sector has been included in the European Union's Emission Trading Scheme (ETS) since 2012. As a high emitting sector (approximately 3% of the EU's total GHG emissions), it is very likely to face increased regulation in the future.²⁹ This is problematic because Celtic Connections is very dependent on foreign artists and performers. For instance, over 2,000 artists from over 25 countries performed at this year's festival.³⁰ Therefore, higher airfare costs may reduce the number of international artists that are able to attend future events. Additionally, the Scottish government's commitment to decarbonize the road transport sector by 2050 may reduce the ability of local visitors to attend events. This can be further exacerbated by the implementation of carbon taxes. Celtic Connections may be affected by these changes as higher fuel prices which could disincentivize visitors from attending events. Specifically, this may lead to attendance being affected by public transit and petrol prices.

Policies aiming to reduce emissions from energy consumption may lead to higher expenses for festival venues. Although Scotland has made significant progress to decarbonize the power sector over the last five years³¹, energy prices may continue to rise as the shift towards renewable energy continues. Energy prices are already set to increase this year in Scotland, which may lead to an increase in festival expenses since energy consumption is vital to most performances and necessary for heating in the winter.³²

Increased regulations on waste production and disposal will require further attention from festival organisers. This year, over 130,000 people attended events over the span of 18 days.³⁰ A large amount of waste is likely to be generated as a by-product of the overwhelming mass of people that attend the festival each year. This raises a threat to Celtic Connections as Scotland continues to focus on reducing emissions from waste.³¹

There is uncertainty over the recommendations that will be presented by Glasgow's Emergency Working Group. This will have an impact on Celtic Connections because the actions proposed by the Working Group are likely to have a direct impact on certain activities in the region. These actions are likely to reflect ambitious targets since the purpose of the Working Group is to guide Glasgow's transition to becoming carbon neutral by 2037.

5.2 Physical

The following section analyses the physical risks posed by climate change and has been developed through use of the Adaptation Scotland online toolkit.⁵

Table 2 Physical risks from climate change and main areas of impact.⁵

Areas of Impact		Impacts of Climate Change and Extreme Events
People	Customers	Significant potential impacts on festival goers due to heavy rainfall, surface flooding and gale force winds. Previous examples include Storm Frank in winter 2015 and Storm Emma in winter 2018. Both caused widespread disruption and shut down much of the city's transport links ³³ . This discourages potential customers from attending events and also puts in danger those who do brave poor weather to attend.
	Staff	As Celtic Connections is a mobile operation and does not have one fixed location, it depends on using multiple event spaces around Glasgow, which in turn depend on multiple teams of staff. Should disruption caused by climate change-induced extreme weather prevent staff from reaching their workplace, festival events may struggle to operate effectively, and cancellation presents a real threat.
Premises	Buildings	The festival takes place in Glasgow City Centre, which is a heavily urbanised area. Many buildings are at threat of high winds – Glasgow Central Station, one of the city's major transport hubs, had to close due to flying debris during winter storms in 2013 that saw wind speeds reach in excess of 100mph. ³⁴
	Outdoor Spaces	Flood risk should be considered as many of the event spaces used in Glasgow City Centre are located close to the Clyde and are also at risk of surface flooding – see Figure 6 below for a topographical map of the city centre.
Markets	Changing demand for goods and services	Climate change will mean Glasgow is set to experience wetter winters with more frequent extreme weather. Sustained poor winter weather (during the period when Celtic Connections takes place every January) over the years could reduce potential customer's enthusiasm for attending the festival and in turn affect ticket sales and the festival's commercial viability.
Finance	Cost of damage to assets, property	The financial toll of extreme weather and flooding can reach significant amounts. Heavy rainfall in winter 1994 saw widespread flooding throughout Glasgow that was estimated to have a financial impact of £100m. ³⁵
	Cost of damage to lost sales	Should climate change-induced inclement weather force cancellation of Celtic Connections events, the festival will be liable to refund customers. The cost of this could impact not only current profitability but the future commercial viability of the festival.

Areas of Impact		Impacts of Climate Change and Extreme Events
Logistics	Supply Chain	The businesses in Glasgow City Centre rely on the boost in footfall during January coming from the festival, a month typically known for empty premises. Their supply chains can be vulnerable to the effects of climate change and a full assessment should be carried out to ensure their operations are considering and adapting to climate change.
Transport		Many festival goers use public transport to attend music events, and they are encouraged to do so through Celtic Connections sponsor partnership with ScotRail. Extreme weather can cause widespread disruption to both bus and train networks and impacts people's ability to attend festival events.

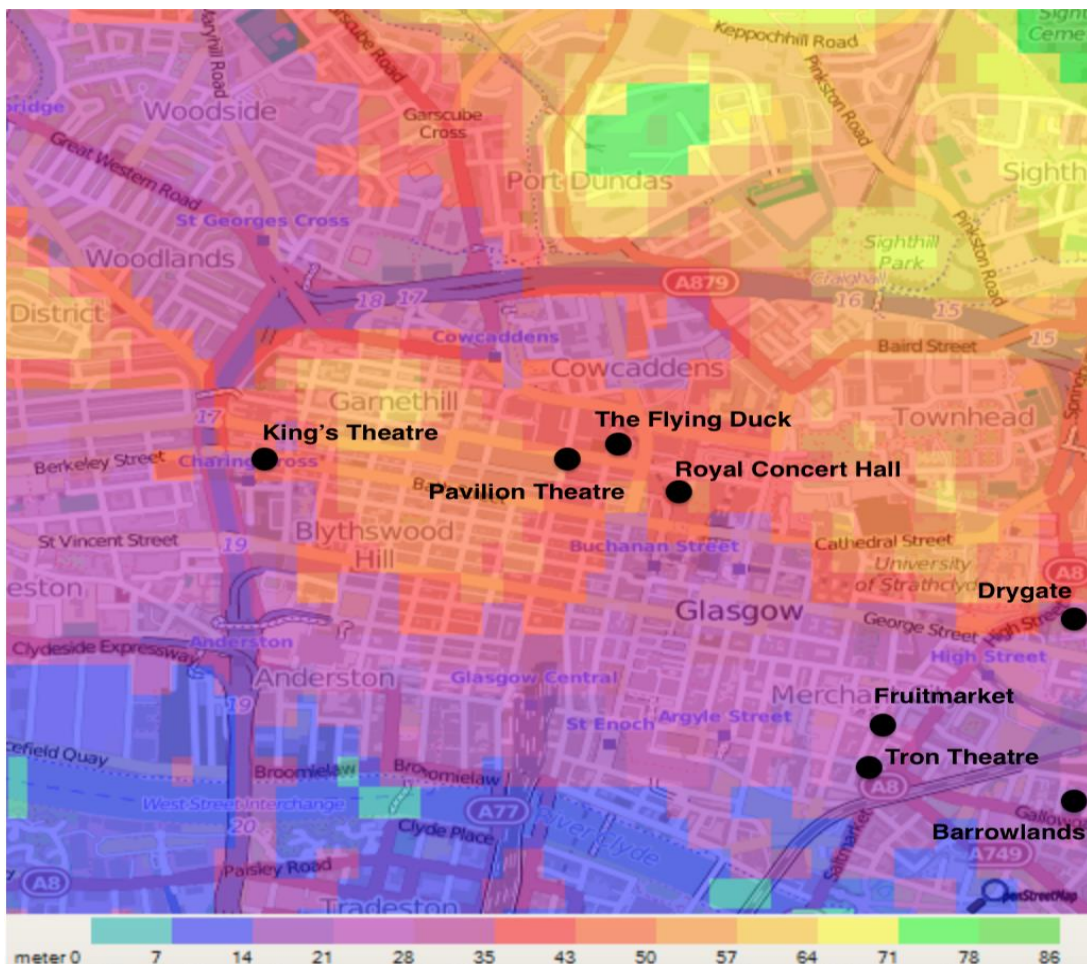


Figure 6 Topographical map of Glasgow City Centre with regular festival event spaces highlighted.³⁶

5.3 Reputational

A threat to Celtic Connections' reputation could come from failing to comply with updated legislation and also from the physical impacts of climate change. For example (as highlighted in Table 2) if extreme weather prevents customers or staff being able to reach the venues and events are cancelled. Celtic Connections should take a long-term view and adapt to ensure these risks are considered, gaining a negative reputation could impact on ticket sales and the long-term commercial viability of the festival. Similarly, if artists are flown in from around the world and no longer are able to perform at events that have been cancelled, they may be less inclined to work with Celtic Connections in the future.

Increasing consumer awareness of the issues surrounding climate change means that many music festivals are coming under increasing scrutiny regarding their green credentials and sustainability efforts. If Celtic Connections do not take action, there is a danger they may alienate a growing segment of the population who take these issues seriously and consequently may be disinclined to attend their events.

5.4 Financial

The rising impact and frequency of extreme weather presents a financial threat to the future of Celtic Connections. High winds, rain, and surface flooding all present possible reasons why an event or multiple events could be cancelled. The festival would then be liable to refund customers who have bought tickets, which presents a financial strain on the festival's limited resources. An example can be seen in 2018 when unseasonal heavy rain and gale force winds caused Camp Bestival, a music festival in Dorset, to close down unexpectedly in July 2018.³⁷ Organisers were forced to cancel the festival and issue refunds to the festival-goers in the face of deteriorating weather and a bleak forecast. Increasingly insurance companies are analysing businesses knowledge of possible impacts of climate change and adaptation strategies, to ensure risks have been considered and minimised.

5.5 Cultural

Historically, music has been central to Glasgow's cultural identity and economic activity.^{38, 39} Since 2008, the city of Glasgow has been a UNESCO City of Music where it works towards increasing participation in music, championing partnerships, participating in artistic exchanges, and strengthening the music industry.³⁹ The Celtic Connections festival is a unique contribution to Glasgow's musical center and has been described as the "largest winter music festival of its kind and the UK's premier celebration of Celtic music".⁴⁰ The festival is central to linking Celtic musicians from all over the world, as well as the education program introducing the style of music to a younger audience and keeping the Celtic music alive in Scotland. The direct and indirect impacts of climate change may pose a threat to this annual tradition if it is no longer able to provide the same level of entertainment during the winter months.⁴¹ In particular, losing the ability to host international artists may impact the quality of the festival.

6. Opportunities

In this section, an overview is provided of the key opportunities that can be seized by Celtic Connections as a result of climate change.

6.1 Markets and Services

In terms of the market or the audience who attend Celtic Connections, the milder winters could increase tourism demand and therefore the popularity of the festival for overseas attendees. Celtic connections also have the opportunity to focus on building a local market for the audience and performing artists. This would ensure resilience against impacts from aviation or carbon taxes or difficulties with weather. Celtic connections should continue to build an interest in Celtic music to increase the Scottish audience through the educational program. Continuing events such as the 'Danny Kyle Open Stage' for young Scottish artists⁴² would also increase number of Celtic musicians in Scotland.

Celtic Connections could widen their services to allow for performances and workshops to be streamed online, allowing people who cannot travel due to weather or aviation carbon tax to access different events. In order to adapt to the threat of extreme weather events Celtic Connections could consider having smaller events throughout the year, such as a long weekend event in spring or autumn, which would mean if the main event was cancelled, they still have the opportunity to make profits.

6.2 Transport

As discussed in the regulatory risk section it is likely that the cost of fuel and therefore transport will increase. To combat this Celtic Connections could encourage audience and artists to travel to events in different ways such as:

1. Choosing public transport and dedicated coaches rather than private cars;
2. Embracing carpooling opportunities.

As well as making transport cheaper these options would also reduce greenhouse gas emissions related to transport. According to a report from Powerful Thinking about Festival Vision 2025, increasing the number of customers arriving in event-specific coaches to 30% as well as increasing the number arriving by train and bus to 60% could achieve a significant 18% reduction in CO₂ emissions. Increasing average car occupancy from 2.6 to 3.5 passengers would additionally have the effect of reducing emissions by 20%.⁴³

A continued partnership with sponsor ScotRail is highly recommended. During the 2017 festival, artists playing at Celtic Connections engaged in PR for the transport company, using social media to advertise the ease of travel around Scotland and of getting to Glasgow to attend events.⁴⁴ Marketing and advertising activities like this highlight and encourage the use of public transport to festival-goers and encourage them to leave the car at home.

6.3 Reputational

Celtic Connections has a worldwide reputation for being one of the biggest Celtic music festivals in the world, attracting an audience of over 130,000 people in 2019.³⁰ The festivals visibility and impact creates a significant opportunity to lead the way in urban music festival sustainability and climate leadership. One way of achieving this would be through obtaining an award from *A Greener Festival*, an

environmental campaign group who help music festivals all over the world successfully adopt greener practices. Currently the only Scottish festival to have achieved an Outstanding award is HebCelt, or the Hebridean Celtic Festival.⁴⁵ In order to achieve the prestigious award, Celtic Connections would have to complete a detailed self-assessment and submit up-to-date information on everything from their carbon footprint to waste and recycling plans. Then they would have to be audited by an independent environmental assessor during their full 18-day programme. If achieved, the award would position them as a global leader in green festival management and give them a significant reputational advantage.

6.4 Cultural

Culture is a very important part of the Celtic Connections festival and there is a great opportunity for the festival to have a positive influence on people's attitudes and feelings towards climate change. Celtic Connections could use the festival platform to build awareness for example by including songs about climate change or the environment within the concerts and education program. With growing awareness of climate change and citizen activism the festival could partner with the children's climate 'strike' and use workshops and the educational program to help students create Celtic songs to promote their cause, which is a long cultural tradition in Glasgow. Over 196,000 students throughout Scotland have taken part in the festival's programme of workshops since 1998⁴⁴ so the potential reach and impact of such activities should not be underestimated.

Additionally, Celtic Connections has the opportunity to highlight the impacts of climate change around the world. Each year, Celtic Connections leads the Showcase Scotland initiative where the festival partners with a country to "create new international links and advance opportunities for their musicians".⁴⁶ The festival can leverage this link and its diverse fan base to bring awareness to the effects of climate change in each of these countries. For example, next year's Showcase Scotland partner is with artists from Finland.⁴⁷ The festival can highlight Finland's vulnerability to severe flooding and changes in agriculture through different forms of artistic expression.⁴⁸ This would be an effective way of raising awareness since Showcase Scotland is Scotland's highest profile and most successful showcasing event.³⁸

7. Recommendations

The main recommendations created from the risks and opportunities are as follows:

- Ensure Celtic Connections has knowledge and compliance with climate change regulations for mitigation and adaptation. Take steps to ensure the festivals resiliency to increases in transport or energy prices.
- Create an adaptation plan which considers possibility of increased frequency and severity of extreme weather events. This adaptation plan will ensure financial, reputational and cultural risks are minimised currently and in the future helping the festival to remain financially viable and maintain a strong reputation.
- Focus on continuing to build a local audience, create more opportunities for school age students to attend events and workshops, and nurture and encourage local artists.
- Create a new service which allows events and workshops to be streamed.
- Aim to be a leader in Green Festivals and obtain a Greener Festival Award.
- Use cultural opportunity to partner with 'school strike' students to create Celtic protest songs and music. Also raise awareness of climate change through Showcase Scotland initiatives and partnerships.

8. Conclusion

Climate change has the potential to impact on all businesses and it is imperative for organisations such as Celtic Connections to adapt against the risks and make the most of any opportunities. The framework in this case study was created on behalf of Creative Carbon Scotland (CCS) and is specific to cultural SMEs. As highlighted within the framework cultural SMEs must consider the physical risks from an increased probability of extreme weather events. Regulatory, financial and reputational risks posed by climate change can be minimised through an adaptation plan. Opportunities to become a market leader such as in Green Festivals, or to create new services such as online streaming of events should also be considered.

For cultural SMEs it is imperative to consider the risks and opportunities from a cultural perspective as this sector has a crucial role to play in raising awareness and encouraging positive behavioural changes. As one of the largest music festivals in Europe, Celtic Connections has the opportunity to grow awareness of climate change among their audiences and thus have a positive impact. This illustrates our main conclusion that although climate change poses many risks to cultural SMEs, it also presents significant opportunities both in terms of adaptation and mitigation. The framework developed in this report can be used to inform other cultural SMEs in the Greater Glasgow region of the actions that can be taken in the short and long term to avoid financial losses and create new opportunities.

References

- [1] IPCC (2018) Summary for Policymakers. Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C. [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland, 32 pp.
- [2] Stern, N.H. & Great Britain. Treasury, issuing body. (2007). The economics of climate change: the Stern review, Cambridge: Cambridge University Press. (pg xvi)
- [3] Hoffman, A.J., (2015). How culture shapes the climate change debate, Stanford, California: Stanford Briefs, an imprint of Stanford University Press.
- [4] Task Force on Climate-related Financial Disclosures (TCFD). (2017). Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures. Available at: <https://www.fsb-tcf.org/publications/final-recommendations-report/> (Accessed: 20 March 2019).
- [5] Adaptation Scotland. (2017). Is your business climate ready? Available at: <https://www.adaptationscotland.org.uk/how-adapt/tools-and-resources/your-business-climate-ready> (Accessed: March 15th 2019).
- [6] UKCIP. (2019). United Kingdom Climate Impacts Programme – Tools. Available at: <https://www.ukcip.org.uk/wizard/tools-portfolio/> (Accessed: 10 March 2019).
- [7] Celtic Connections. (2019). Celtic Connections 1994. Available at: <https://www.celticconnections.com/history/Pages/1994.aspx> (Accessed: 2 April 2019).
- [8] Glasgow City Council. (2017). Briefing Paper by Executive Director of Development and Regeneration Services. Available at: <http://www.glasgow.gov.uk/CHttpHandler.ashx?id=40153&p=0> (Accessed: 1 April 2019).
- [9] Google. (2019). Google maps Glasgow, Scotland. Available at: <https://www.google.com/maps/> (Accessed 20 March 2019).
- [10] Creative Scotland. (2018) Annual Budget 2018/19. Available at: https://www.creativescotland.com/__data/assets/pdf_file/0004/57487/Annual-Budget-2018_v2.pdf (Accessed: 30 March 2019)
- [11] Getmemedia (2012). Sponsorship: Celtic Connections music festival. Available at: <https://www.getmemedia.com/ideas/sponsorship-celtic-connections-music-festival/glasgow-life.html> (Accessed: 2 April 2019).
- [12] UK Government. (2008). Climate change act 2008. Available at: <http://www.legislation.gov.uk/ukpga/2008/27/contents> (Accessed: 1 March 2019).
- [13] Scottish Government. (2014). Climate change adaptation programme (SCCAP). Available at: <https://www.gov.scot/publications/climate-ready-scotland-scottish-climate-change-adaptation-programme/pages/3/> (Accessed: 1 March 2019).

- [14] Scottish Government. (2018a). Scottish climate change adaptation programme: progress report 2018. Available at: <https://www.gov.scot/publications/climate-ready-scotland-scottish-climate-change-adaptation-programme-fourth-annual/pages/5/> (Accessed: 2 March 2019).
- [15] Sustainable Glasgow. (2015). Energy and carbon masterplan. Available at: <https://glasgow.gov.uk/CHttpHandler.ashx?id=32441&p=0> (Accessed: 2 March 2019).
- [16] Scottish Government. (2018). Climate change bill. Available at: <https://www.gov.scot/policies/climate-change/climate-change-bill/> (Accessed: 1 March 2019).
- [17] Scottish Government. (2011). Public bodies climate change duties: putting them into practice, guidance required by part four of the Climate Change (Scotland) Act 2009. Available at: <https://www.gov.scot/publications/public-bodies-climate-change-duties-putting-practice-guidance-required-part/> (Accessed: 1 March 2019).
- [18] Sustainable Glasgow. (2015). Energy and carbon masterplan. Available at: <https://glasgow.gov.uk/CHttpHandler.ashx?id=32441&p=0> (Accessed: 2 March 2019).
- [19] Climate Ready Clyde. (2017). Terms of reference. Available at: <http://climatereadyclyde.org.uk/wp-content/uploads/2018/06/Climate-Ready-Clyde-Terms-of-Reference.pdf> (Accessed: 4 March 2019).
- [20] Glasgow City Council. (2019). Emergency working group set up to tackle city's climate change challenge. Available at: <https://www.glasgow.gov.uk/index.aspx?articleid=23847> (Accessed: 4 March 2019).
- [21] IPCC. (2014). IPCC Assessment Report 5, WG III, Ch. 5: Drivers, Trends and Mitigation. Available at: https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter5.pdf (Accessed: 25 January 2019).
- [22] Met Office. (2019). Glasgow climate information. Available at: <https://www.metoffice.gov.uk/public/weather/climate/gcuvz3bch> (Accessed: 22 March 2019).
- [23] Glasgow City Council. (2016). Glasgow's Local Climate Impact Profile. Available at: <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=7272&p=0> (Accessed: 8 March 2019).
- [24] Glasgow City Council. (2016). Glasgow's Local Climate Impact Profile. Available at: <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=7272&p=0> (Accessed: 8 March 2019).
- [25] Climate Ready Clyde. (2018). Our vision for Glasgow and the Clyde Valley. Available at: <http://climatereadyclyde.org.uk/wp-content/uploads/2018/05/CRC-vision.pdf> (Accessed: 27 March 2019).
- [26] Glasgow Live. (2018). Glasgow in the snow. Available at: <https://www.glasgowlive.co.uk/news/glasgow-news/glasgow-snow--pictures-beast-14351734> (Accessed: 27 March 2019).
- [27] CEDA. (2018). UKCP18 Regional Projections for UK Countries for 1980-2080. Available at: <https://catalogue.ceda.ac.uk/uuid/b70faeaf5f7a445cbfde3fc968150767> (Accessed: 8 March 2019).

- [28] Climate Ready Clyde. (2018). Our vision for Glasgow and the Clyde Valley. Available at: <http://climatereadyclyde.org.uk/wp-content/uploads/2018/05/CRC-vision.pdf> (Accessed: 27 March 2019).
- [29] European Commission. (2019). Reducing emissions from aviation. Available at: https://ec.europa.eu/clima/policies/transport/aviation_en#tab-0-0 (Accessed: 20 March 2019).
- [30] Celtic Connections. (2019). Celtic connections 2019 ends on a high note. Available at: <https://www.celticconnections.com/press-area/Pages/default.aspx> (Accessed: 25 March 2019).
- [31] Committee on Climate Change. (2018). Reducing emissions in Scotland 2018 progress report to parliament. Available at: <https://www.theccc.org.uk/wp-content/uploads/2018/09/Reducing-emissions-in-Scotland-2018-Progress-Report-to-Parliament.pdf> (Accessed: 20 March 2019).
- [32] Huffington Post. (2019). April price increases: How your energy bills, council tax, TV licence and more are affected. Available at: <https://www.huffingtonpost.co.uk/> (Accessed: 30 March 2019).
- [33] BBC News. (2018). UK Weather: snow causing widespread travel disruption. Available at: <https://www.bbc.co.uk/news/uk-43221384> (Accessed: 22 March 2019).
- [34] The Guardian. (2013). Scotland starts to clear up damage left by 100mph winds. Available at: <https://www.theguardian.com/uk-news/2013/dec/05/scotland-clear-up-damage-winds-weather> (Accessed: 23 March 2019)
- [35] The Herald. (2009). Glasgow now at high risk from serious floods, expert warns. Available at: <https://www.heraldsotland.com/news/12606478.glasgow-now-at-high-risk-from-serious-floods-expert-warns/> (Accessed: 23 March 2019)
- [36] Floodmap (2019). Elevation of Glasgow, UK. Available at: <http://www.floodmap.net/Elevation/ElevationMap/?gi=2648579> (Accessed: 22 March 2019)]
- [37] BBC News. (2018). Camp Bestival cancelled after heavy rain and high winds. Available at: <https://www.bbc.co.uk/news/uk-england-dorset-44997816> (Accessed: 24 March 2019).
- [38] Creative Scotland. (2014). Music sector review. Available at: https://www.creativescotland.com/__data/assets/pdf_file/0014/21470/Creative-Scotland-Music-Sector-Review-v1-2.pdf (Accessed: 20 March 2019).
- [39] UNESCO. (2019). Glasgow: About the creative city. Available at: <https://en.unesco.org/creative-cities/glasgow> (Accessed: 20 March 2019).
- [40] Celtic Connections. (2019). Celtic Connections. Available at: <https://www.celticconnections.com/Pages/default.aspx> (Accessed: 20 March 2019).
- [41] The Scotsman. (2018). Donald Shaw to 'step aside' as Celtic Connections artistic director. Available at: <https://www.scotsman.com/lifestyle/donald-shaw-to-step-aside-as-celtic-connections-artistic-director-1-4682665> (Accessed: 20 March 2019).
- [42] Celtic Connections. (2019). Danny Kyle Open Stage. Available at: <https://www.celticconnections.com/Pages/Open-Stage.aspx> (Accessed: 3 April 2019).

- [43] Johnson, C. (2015). 'Powerful Thinking: The Show Must Go on. Report and Vision for the UK Festival Industry'. Available at: <http://www.powerful-thinking.org.uk/site/wpcontent/uploads/TheShowMustGoOnReport18..3.16.pdf>. (Accessed: 1 April 2019).
- [44] Glasgow Life. (2018). Celtic Connections. Available at: <https://www.glasgowlife.org.uk/media/2261/celtic-connections-sponsorship.pdf> (Accessed: 20 March 2019).
- [45] HebCelt. (2013). HebCelt Makes Big Impression with small footprint. Available at: <https://www.hebcelfest.com/news/?from=qmdjcddjatso&id=135&view=full> (Accessed: 20 March 2019).
- [46] Glasgow Life. (2019). Celtic Connections 2019 ends on a high note. Available at: <https://www.glasgowlife.org.uk/news/celtic-connections-2019-ends-on-a-high-note> (Accessed: 3 April 2019).
- [47] Music Finland. (2019). Finland will be Showcase Scotland's focus country in 2020. Available at: <https://musicfinland.com/en/news/finland-will-be-showcase-scotlands-focus-country-in-2020> (Accessed: 3 April 2019).
- [48] Veijalainen N, Lotsari E, Alho P, Vehviläinen B, Käyhkö J. (2010). National scale assessment of climate change impacts on flooding in Finland. *J Hydrol.* 391(3-4):333-350.