

## **SSAC REPORT - SCIENCE AND EVIDENCE FOR PLACE-BASED ADAPTATION**

### **Acronym**

CAP: Community Action Plan

CCC: Climate Change Committee

SSN: Sustainable Scotland Network

SSAC: Scottish Science Advisory Council

SCCAP: Scottish Climate Change Adaptation Programme

SWOT: Strengths, Weakness, Opportunities and Threat

PCAN: Place-based Climate Action Network

SEPA: Scottish Environment Protection Agency

SG: Scottish Government

MGSDP: Metropolitan Glasgow Strategy Drainage Partnership

M&E: Monitoring and Evaluation

UK: United Kingdom

UKRI: United Kingdom Research and Innovation

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## 1.0) Introduction

This report aims to inform the Scottish Government in preparations for the next Scottish Climate Change Adaptation Programme (SCCAP) by providing a review of recent and current research-driven development projects on place-based adaptation in Scotland. The report acknowledges the importance of place-based adaptation in addressing the differential impacts of climate change across different locations and highlights the need for a tailored approach rather than a one-size-fits-all solution. Although there are many place-based adaptation initiatives in Scotland, evidence of their successes, lessons learnt, and challenges faced is limited. The report draws from different projects to provide evidence on individuals and groups working in place-based adaptation and to provide a summary of lessons learnt from different projects to inform future planning and decision-making.

The report aims to:

- 1) Outline the theoretical rationale for place-based adaptation
- 2) Identify adaptation projects with place-based approach that have recently being implemented or are being implemented in Scotland.
- 3) Identify strengths, weaknesses, barriers, and threats across the place-based adaptation projects.

There are four components to this report.

- 1) The background section provides some context on place-based adaptation. Key literature around place-based adaptation has also been synthesised in this section. The evolution of place-based approach in Scottish policies are also presented in the section.
- 2) The method section outlines the method of data collection and analysis.
- 3) The findings section includes the SWOT (Strength, Weakness, Opportunity, and Threat) analysis taken from the online survey and interviews.
- 4) The conclusion section provides a summary of key findings, recommendations, and suggestions for future research.

## 2.0) Background

### 2.1) Place-based adaptation: concepts

While historically, adaptation planning and policy has focused largely on national scale (Measham et al., 2011), attention to adaptation at the local level has increased rapidly in recent years. The emphasis on local adaptation comes from many sources. This section highlights some key insights gained from literature review of place-based adaptation studies in the UK and other countries where appropriate.

Within adaptation literature, there is a wide acknowledgement that ‘adaptation is local.’ Because the impacts of climate change are experienced locally, the geographic variability of climate impacts emphasise the need for ‘place-based approaches’ to analyse and adapt to climate change impacts.

Table 1 outlines diverse ways in which place-based adaptation has been conceptualized, as identified in the literature.

**Table 1: Key concepts of place-based adaptation as identified in recent literature**

S.N	Definition	Key themes	References
1	An approach to address cross-sectoral and multi-level governance concerns as well as to build local adaptive capacity in vulnerable resource-dependent communities facing the adverse impacts of climate change.	Multi-sector and multi-level governance, adaptive capacity of community	Khan et al. (2016)
2	<ul style="list-style-type: none"> <li>• Actions which involve shaping, developing, or enhancing a 'place' in response to current and projected climate change, whilst contributing to a broader context of change and social and ecological justice.</li> <li>• Understanding and responding to the unique context and challenges of different places.</li> </ul>	Place value, Current and future climate, Context-specific, Social and ecological justice	Murtagh and Lane (2022)
3	For adaptation to be 'place-based,' it must explore and engage with those different perspectives and values. It must also not just think about the people who are in 'a place' now, but also who might be there in future.	Different values, Community engagement	RMIT (2020)
4	Place-based adaptation is based on the idea that a place should be planned, designed, and managed to suit the needs of the people who live there, and should be shaped by those same communities.	Community planning	SG (2021)
5	Place-based adaptation is tailored to the unique characteristics and needs of a specific community or location. This allows for the development of effective and sustainable strategies that are well suited to the local context, and that can take into account the unique challenges and opportunities that exist in that area.	Context-specific	Krabbe (2021a) p 14

From the review of literature, place-based adaptation was not defined as a singular concept, but it exists as something that has features of community engagement, planning, adaptive capacity, multi-level governance, among others.

This conceptual framing of place-based adaptation presented the starting point of the analysis. Even though place-based adaptation has received some theoretical discussions, the empirical place-based adaptation studies are comparatively rare (Murtagh and Lane, 2022). Therefore, the literature review was expanded to understand the theoretical rationale of place-based planning and place-based policies, which might have a bearing on place-based adaptation. Six broad themes were identified from the literature:

#### 1) **Place-based adaptation, by definition, should have a focus on place.**

Currently, a place-based approach is applied to different disciplines such as urban planning, environmental management, and climate change, among others. Despite the emergence of place-based policies, several authors have argued that such initiative lack conceptual clarity and operational precision (Groulx et al., 2014). However, the common theme between these diverse policy areas is the focus on 'place.'

As the term suggests, place-based approach focuses on specific cities, towns, and regions, but they represent more than just an already established programmes of government activity, or the concentration of public sector resources in specific locations. According to Beer et al. (2020b, p. 12),

place-based approach embodies a “development ethos that recognizes the context of individual cities, regions or rural areas.” Furthermore, (Beer et al., 2020b, p. 12) emphasises that place-based approaches call for “development of all parts of the landscape, with no settlement, too small or too remote to plan.” However, place has much more to do than just the space and scale. As pointed out in (Tschakert et al., 2017), place is not a space in the world, it is also a way of seeing, knowing, and understanding the world.

As place-based adaptation, ‘place’ has not been defined to an absolute point; a relative measure applies where we can only aim to understand what constitutes as place. There is a growing interest in focusing on ‘place’ as a scale for implementing climate actions and engaging individuals and communities in the process (SSN, 2019). Likewise, Praskiewicz (2022) has reviewed different terminologies related to the concept of place in the context of climate adaptation and concluded that place is deeply engraved in the discourse of adaptation. This is because not only adaptation actions are by necessity based in place, but place also affects both the need for adaptation (exposure to risk) and the ability to adapt (adaptive capacity). Many researchers have also explored adaptation through the lens of place-attachment (Schweizer et al., 2013), which refers to bonds of attachment between individuals and communities and a specific place. Moreover, results have shown that depending on the context, place attachment can either increase or decrease adaptive capacity.

Therefore, understanding how people experience places and the people in them, and thus the potential trade-offs and barriers encountered for different adaptation options, is essential to for adaptation to be effective, legitimate, and equitable (O’Neill and Graham, 2016, Quinn et al., 2019).

## **2) Place-based adaptation should address place-based values.**

Place based policies usually emphasise the need to have focus on value creation and local capture of value (Beer et al., 2020a). It is possible that motivations and priorities for adaptation could be rooted in unique place-based values. Local scale adaptation is most effective when place-based social values are considered.

There are empirical studies that link community vulnerability, citizen perceptions of climate change, and community connections to valued place. Scannell and Gifford (2010) for example, recently compared global and local climate change messaging and found that place-based messages are more meaningful to the public. At the same time, place is more than just a way to frame communications around climate change. In the context of adaptation planning, local values could be a point of convergence for diverse stakeholders who possess otherwise differing worldviews and interests.

Place can therefore be a common language for understanding the realities of local climate adaptation, as well as a vehicle to help acknowledge that climate change threatens established cultural traditions and identities.

## **3) The importance of context: Place based adaptation should be context-specific**

A defining feature of any place-based approach is the need for sensitivity to local conditions and opportunities with policies, and programmes and most especially, actions tailored to the context of each place (Beer et al., 2020a). The importance of specific context, culture communities and environment has taken over the perspective of replicability and generalization (Quintana Vigliola, 2022). This can be due to particular methods not being effective across all contexts or due to process steps triggering different dynamics. From adaptation perspective, the ways in which some communities adapt to climate change are outcomes of their knowledge systems, worldviews, cultural values, place attachment, as well as history of colonization and power asymmetries. Any

misalignment in the cultural values concerning people and place relations might lead to development of ill-adapted interventions at the community-level (Wamsler et al., 2019). Place-based adaptation therefore should consider community priorities, policy, relationship dynamics, and institutional arrangements. These contexts have been cited to contribute to understanding of bigger problems at a local scale (Ramalho et al., 2022).

#### **4) Community based adaptation/ Bottom-up approaches and community engagement**

In some literature, community-based adaptation (CBA) has been referred to as place-based adaptation (Ramalho et al., 2022). CBA are bottom-up approaches to climate adaptation, where communities that are vulnerable to the impacts of climate change are involved in identifying, assisting, or implementing activities that will increase their adaptive capacity to climate change. Whether place-based adaptation is being framed as community-based adaptation or bottom-up adaptation, engagement with communities is a core feature of place-based adaptation.

There is a strong consensus that public participation is a necessary feature of place-based adaptation. Local communities usually have an understanding of the local context because of their lived experiences and interests in the well-being of the community or region. Sometimes, they might be central to community led partnerships. Therefore, place-based approaches should provide community members and stakeholders (citizens, industry and diverse non-government organization and all levels of government), with a framework for identifying and responding to the local needs and improving social, economic, and physical wellbeing in a particular location. However, there is debate about what is a community? Moreover, whether this is an appropriate term for effective adaptation. Understanding what a community may be, not just framed around a geographic location, and is critical to forming a collaborative group of people.

#### **5) Multi-level governance**

A strong and competent local governance is imperative in delivering place-based adaptation (Demblans et al., 2020) (Murtagh and Lane, 2022). Governance has been conceptualized as decision-making arrangements that consists of structures of power and administration that has the capacity to create new institutions or change existing new ones. Furthermore, having local control over resources, through fiscal decentralization-is an important feature of empowered local institutions and their ability to enact place-based initiatives. Central to the emphasis on local governance is the also assumption that communities and other stakeholders will have the opportunity to participate in decision-making spaces.

The features of governance described above are relevant to not only local government but also all levels of government. It is important to note, that different levels of government do not operate in silos. They are usually “interactive and mutually reinforcing” (Mfitumukiza et al., 2020), which means that place-based adaptation could supported by policies, institutional arrangements etc. that exist at multiple levels of government. That is why a vertical integration within government, such as local, provincial, and national. Recent studies on adaptation also push for synergistic approaches that link place-based adaptation with sector-based initiatives (Khan et al., 2016).

#### **6) Place-based adaptation should align with the local development plans and national agendas on climate change.**

Place based adaptation should facilitate collective actions to address climate change, including planning, where the voices of the most vulnerable are taken into account, and development of solutions that are not only cost-effective or socially acceptable, but should also align with local development priorities (Mfitumukiza et al., 2020) . Similarly, a place-based approach would align

local development frameworks and local plans with the national agenda on sustainability, climate goals and, create mechanisms, which enable planning across local authorities (Krabbe, 2021b) .

While these themes are not exhaustive, they are common across the literature and therefore have been selected as the criteria used within this report for mapping place-based adaptation initiatives in Scotland.

## 2.2) The Scottish policy landscape

The Scottish policy landscape encourages place-based way of working. Aterton and Glass (2021) highlight how some of the key principles of place-based working, such as collaboration and partnership, cross-sectoral thinking, and the emphasis on 'place' are reflected in Scotland's National Performance Network. The concept 'place,' 'place-based approach' can also be seen to be one of central themes in the Scottish Government's Programmes for Government since it first appeared in the 2017-2018 Programme. Figure 1 demonstrates the Scottish Government's recognition of the importance of place in the last six years.

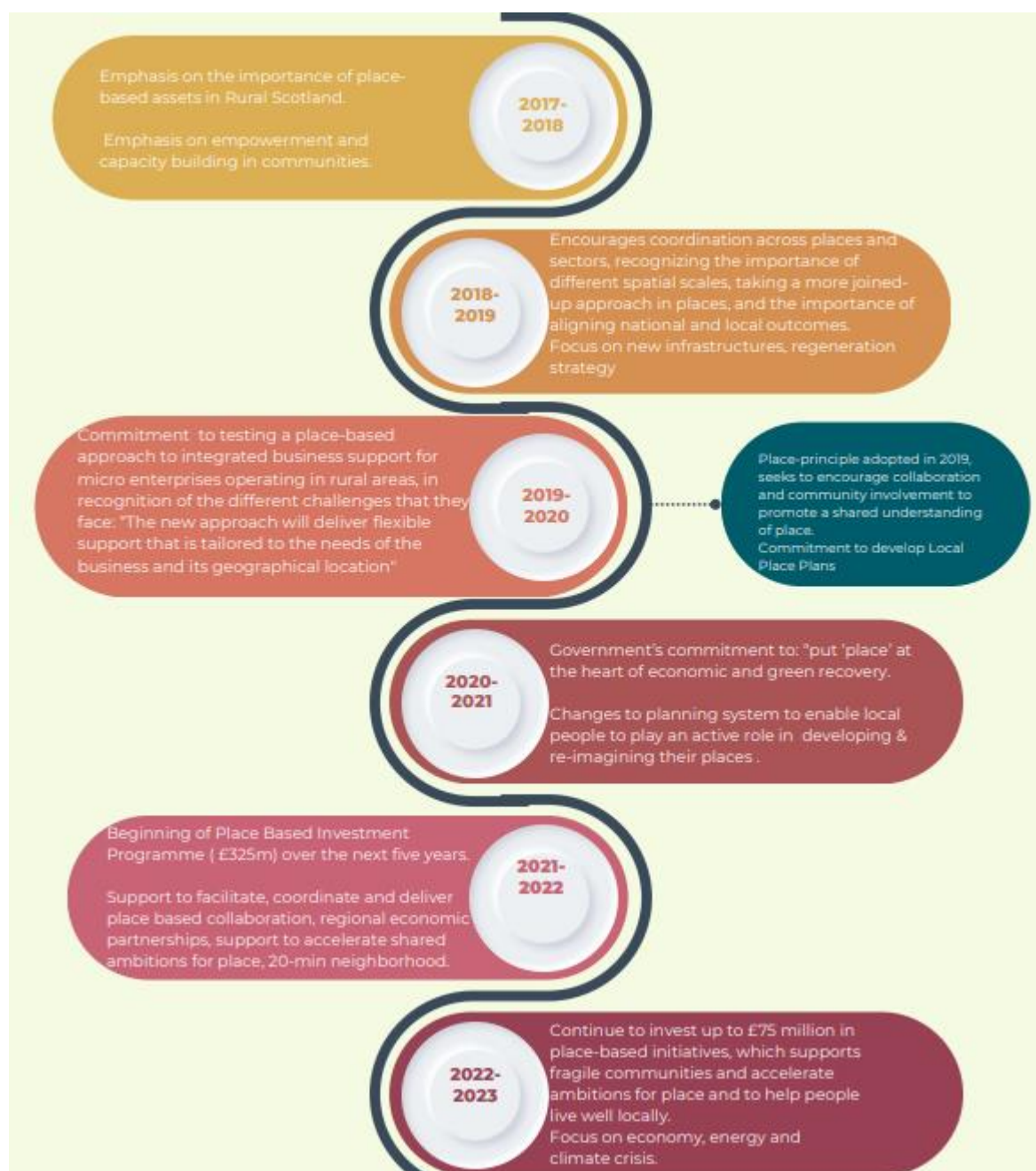


Figure 1 Emergence of 'place' in Scottish Government's Programme for Government from 2017-2018 to 2022- 2023

The Scottish Government has consistently emphasized the importance of 'place' across various policy arenas such as infrastructure, community regeneration, and energy and climate crisis in their Programme for Government. This is reinforced by specific policy tools like the Place Principle<sup>1</sup> and the commitment to develop Local Place Plans<sup>2</sup>. There is clearly a recognition of the need for devolved decision-making at the local level, partnership and collaboration and most importantly

<sup>1</sup> Place Principle: The Place Principle is a framework that emphasizes the importance of taking a place-based approach to decision-making, planning, and investment, taking into account the unique characteristics, needs, and aspirations of individual communities. <https://www.gov.scot/publications/place-principle-introduction/>

<sup>2</sup> Local Place Plans: Local Place Plans are a key component of the Scottish Government's wider efforts to reform planning and implement the Planning (Scotland) Act 2019. The 2019 Act aims to reduce conflict and improve community engagement in planning matters while building public trust in the planning system. <https://www.gov.scot/publications/circular-1-2022-local-place-plans/>



giving people a voice in shaping the future of their communities. In theory, a foundation for effective place-based adaptation exists within Scottish policy (Aterton and Glass, 2021).

### 3.0) Method

#### 3.1) Identifying researchers and projects on place-based adaptation

An initial scoping exercise helped to identify key researchers/research groups and projects working in Place-based adaptation. We reviewed recent [UKRI \(UK Research and Innovation\) database](#), university department websites to identify projects and researchers. We also engaged with [Sniffer](#) to help identify relevant projects and practitioners. The list of relevant researchers and place-based adaptation projects have been compiled into a database.

#### 3.2) SWOT analysis: definition

This research utilized a SWOT analysis to achieve the objective of the study. SWOT analysis is a commonly used approach to identify and analyse factors characterizing the internal and external environment to support decisions. SWOT includes two factors internal factors (strengths and weakness) and external factors (opportunities and threats). Internal factors relate to internal attributes of the project under study, which support a successful outcome (Strengths) or make success difficult to achieve (Weakness). External factors are factors that originate from the outside environment and can lead to positive (opportunities) and negative (threats) influences (Baycheva-Merger and Wolfslehner, 2016).

#### 3.3) Identification of SWOT factors for Place-based adaptation

Through a literature review on climate adaptation, some general strengths and weaknesses were identified by categorising the internal factors that could enhance or prevent the ability of place-based adaptation initiatives to bring a positive influence. Correspondingly, the opportunities and threats were determined by categorizing the external factors (such as institutional, financial, political etc.) that could create positive or negative potential for the implementation of place-based adaptation. The respondents were asked to choose the relevance of those SWOT elements in the projects that they were associated with, which was very much grounded in the Scottish context.

#### 3.4) Data Collection and Analysis

The initial scoping exercise helped identify some relevant projects and experts in the field. We then designed an online questionnaire for the SWOT analysis. The SWOT elements were identified through literature review on place-based adaptation, and adaptation in general. The survey questionnaire consisted of series of rating and ranking questions, where the respondents were asked to rate the relevance of the SWOT elements in the Scottish Context. The online survey also included some open-ended questions where they were asked to list other relevant SWOT elements that were not listed in the survey. The participants represented different stakeholder groups (academia, public sector, sustainability charity, and research programmes). The online survey was complemented by in-depth interviews. The interview questionnaire consisted of open-ended questions to explore their perspectives and experiences on Place-based adaptation particularly in relation to 1) what the enablers for the implementation of place-based adaptation) are; 2) what the challenges has been associated with the implementation of place-based adaptation; and 3) any means to strengthen its implementation and mainstreaming it in Scotland.

#### 3.5) Challenges encountered

Although all identified stakeholders (practitioners, researchers) were contacted, and had shown interest in the research, it was difficult to secure their and time and commitment to take part. Where interviews could not be arranged, relevant project reports were analysed to gather

contextual detail about projects and the overall findings from all sources were interpreted in the context of national and regional policy frameworks.

### 3.6) Limitations

While the aim of the report was to capture place-based adaptation projects in Scotland that operate at different scales, under different funding streams, most of the respondents and interviewees for this report were associated with [Adaptation Scotland](#), which is funded by the Scottish Government and delivered by Sniffer.

Even though we identified potential projects and research institutions and approached them via email and referrals through SSAC (Scottish Science Advisory Council) Working group, and multiple follow-ups, we were unable to obtain survey responses. It is important to note that the findings may be generalizable but not fully be representative of Scotland, as we were unable to establish contact with all projects that we identified. Therefore, the findings should be considered within the context of the projects and interviewees, as it may not necessarily reflect the broader place-based adaptation landscape. During our research, we became aware of the possibility of adaptation projects being carried out at the community level throughout Scotland, utilizing some of the principles of place-based adaptation if not all. However, we were unable to contact any community-led initiatives except for one. The insights we gained from a community-led project were obtained through Glass et al.'s (2021) report and an interview with one of the researchers associated with the project.

## 4.0) Findings

### 4.1) Comparing adaptation projects against the place-based criteria

Place-based adaptation is a recent and promising approach to climate change adaptation, but it lacks well-established definition and conceptual framework. This made it important to define what we mean by place-based adaptation, to inform the study. Therefore, we carried out a literature review to understand what the key principles of place-based adaptation. We identified six principles:

- 1) The project aimed to understand 'place'. There can be three components to place: location, locale, and sense of place. 'Location' refers to a physically defined geographical area; the 'locale' can be thought of as the material setting that influences social networks between people in a place; and the 'sense of place' describes the ways in which an individual perceives a given area that contributes to shaping an individual or community's sense of self and connection to the place.
- 2) Place-based social values were considered in designing, implementing, or managing the project.
- 3) The project harnessed the context of the place. The context could be its sensitivity to local conditions, social settings, geographical variability, institutional arrangements, development needs, etc.
- 4) The adaptation project engaged with local communities to facilitate collective actions to address climate change.
- 5) The project aimed to enhance multi-level governance relationships between actors and facilitates increased intragovernmental collaboration.
- 6) The project aligned with the local development plans and national agenda on climate change.

The online survey asked the respondents to self-assess the projects against these principles. Some of respondents were part of the following organizations/projects: SEPA (Scottish Environmental Protection Agency), NatureScot, Green Action Network, Outer Hebrides Partnership, The Open

University, Highland Adapts, PCAN (Place based Climate Action Network), The Metropolitan Glasgow Strategy Drainage Partnership (MGSDP), Glasgow City Council, and Scottish Association for Marine Science (SAMS). Out of the eleven responses, seven projects have self-identified to align with all six criteria mentioned earlier, however two self-identified as meeting some criteria but not all. Table 2 demonstrates a breakdown of their responses.

**Table 2: Mapping the number of place-based adaptation projects against identified principles**

S.N	Features of place-based adaptation	Corresponding statement	1	2	3	4	5	N/A	Total responses
			Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree		
1	A focus on place	The project aimed to understand 'place'. There can be three components to place: location, locale, and sense of place. 'Location' refers to a physically defined geographical area; the 'locale' can be thought of as the material setting that influences social networks between people in a place; and the 'sense of place' describes the ways in which an individual perceives a given area.	0	0	0	6	5	0	11
2	Address place-based values	Place-based social values were considered in designing, implementing, or managing the project.	1	0	1	3	6	0	11
3	Context-specific	The project harnessed the context of the place. The context could be its sensitivity to local conditions, social settings, geographical variability, institutional arrangements, development needs, etc.	0	0	0	2	9	0	11
4	Community-led/bottom-up	The adaptation project engaged with local communities to facilitate collective actions to address climate change.	1	0	2	2	5	1	11
5	Multi-level governance	The project aimed to enhance multi-level governance relationships between actors and facilitate increased intragovernmental collaboration.	0	0	2	5	4	0	11
6	Alignment with local and national agenda	The project aligned with the local development plans and national agenda on climate change.	0	0	0	1	10	0	11

## 4.2) Findings of SWOT Analysis

In this section, we highlight the findings of the SWOT analysis as obtained from the online surveys as well as the interviews. The respondents and interviewees were associated with different projects and organizations, which are listed in Appendix.

We found that challenges and opportunities to Place-based adaptation were found to be coherent with the challenges and opportunities for adaptation in general.



Figure 2 SWOT analysis of place-based adaptation (online survey and interviews)

### 4.2.1 Strengths

**Collaboration and Partnership:** The respondents for the SWOT analysis were a mix of practitioners from public sector initiatives and community led initiatives on place-based adaptation. The scale of place-based adaptation ranged from regional level to project level to community level initiatives. Irrespective of the project's scale, most interviewees attributed collaboration and partnerships as the biggest strengths of place-based adaptation. Moreover, they also view it as an outcome that the place-based adaptation has helped foster, as well as opportunities of promising alliance that could influence how adaptation initiatives evolve in the future. Therefore, this was considered the biggest strength of place-based adaptation.

“In our case the partnerships have taken five years to foster. Through these partnerships, we understand that there is no way we can manage those risks on our own. This provides a case for why we need to have partnerships, why we need to do those things, this is now well understood, and these partnerships are not going to be undone.”

This sentiment was echoed by another respondent,

“I think there is a definitely space for future collaborations and the groundwork is already there, to progress we need to be better at explaining why this is important and how it relates to all of the other important work being done - doing so justifies and explains these collaborations and makes them even more successful.”

**Flexibility of place-based approach:** The flexibility associated with place-based approaches was considered another strength of place-based adaptation. Among the aspects of flexibility mentioned, was the ability to determine the specific geography for adaptation, providing workable framework for addressing climate change impacts in a context-specific and locally relevant manner. By being able to determine the geography for adaptation, stakeholders mention, they had the opportunity to identify and prioritize specific regions or locations that require targeted interventions.

The adaptation projects self-identified as place-based, mention their efforts in trying to understand ‘place,’ the systems of governance that it encompasses and then planning what interventions should take place where in the context of the broader climate resilience. This also means that they needed a critical understanding and utilization of peoples’ lived experiences; and sometimes their lived experiences are limited to a town vs. a region with multiple towns that are interlinked and interdependent. This was one of the rationales for determining the geography of regional adaptation. For e.g., Climate Ready Clyde that focuses on Glasgow City region, working with eight local councils, and consisting diverse areas with a mix of a major city, town, and rural landscape.

“Glasgow or certain bits of Glasgow has always functioned as a region. If you look at the labour market, it does not function in Glasgow alone; it functions at a regional level. People live outside Glasgow and then drive in or get a train to get in or vice-versa. Therefore, there was always a recognition that there are key systems that need to adapt to climate change. Transport works at that regional scale, infrastructure-planning works at regional scale. Many of the systems that we were trying to build resilience to work at that geography.”

The scale of the Climate Ready Clyde is broadly akin to the catchment of the Clyde, which is prone to flooding. In that regard, risk was also a determinant of the geography of place-based adaptation.

The flexibility to scale and locate place-based adaptation to a specific context, leaves room for trying out different innovations in governance, planning, participation, and partnership. One interviewee, for example, mentioned utilizing some of the project funding to establish a sustained community entity that would allow community to have a sense of ownership and control over their area.

“There are many landowners around the Loch. The Council has had prior experiences setting up different stakeholder groups, but these initiatives did not prove effective. The place-based approach served as an excellent model for collaboration between private and community sectors, given the diverse range of activities, such as wind farm, community bonding, and other activities that the council cannot adequately address. [] it is much easier to engage with the than the brand (i.e., the Galloway Glens) than the Council.”

This statement not only speaks to the flexibility of trying out different models of partnerships and but also, how place-based adaptation can help set up effective means of community participation provide equitable access to adaptation and acts as development opportunities for vulnerable groups.

One respondent also mentions that flexibility has enabled the use of different approaches to incorporate the uncertainty around climate risks through plausible story lines or scenarios to use with stakeholder groups and develop adaptive pathway for adaptation strategies.

**Addressing issues of inclusion, ensuring effective means to participate:** The respondents provide evidence of inclusion in decision-making processes, ranging from communicating with local businesses and residents to engaging with key stakeholders to generate adaptation plans. The processes are broadly participatory and aim to be representative of diverse interests.

There was mention of inquiry-based method such as questionnaires, interviews to co-creation tools such as workshop and formation of different committees. During the interviews, respondents talked about participatory hazard mapping, focus group discussions with community members suggesting that inclusivity issues are taken aboard by most.

We also found significant awareness of the need of inclusion in building institutional arrangements in the process of integrating adaptation into other urban development strategies. For example, some interviewees proposed climate assembly as a tool to enhance participation for place-based adaptation. Climate Assemblies focused on climate change are intended to educate citizen about the complexities of climate change, while also enabling them to imagine multiple ways of formulating and validating environmental policies (Howarth et al., 2020). Climate Assembly is often targeted to bring together a diverse group of citizens and experts who can share their unique insights and perspectives on climate change, there are critics and reservations around the impacts of Climate Assemblies (Howarth et al., 2022) . Recent criticisms as highlighted by (Machin, 2023) have been around how the goals of consensus during Climate Assemblies may suppress important debates and perspectives that are important to addressing complex and multi-faceted issues around climate change. Furthermore, these spaces are often arranged "top down" by the authorities, with pre-determined topics for discussion, timing, materials, leaving little room for citizens to take initiative and direct the conversation in a way that reflects their needs and perspectives (Machin, 2023). The same author also advocates for structural changes in a way that encourages Climate Assemblies can explore points of disagreement, rather than consensus, and highlight different values and interests, and ultimately help to identify potential pathways forward that are more responsive to the concerns of all stakeholders involved.

Nonetheless, one of the strengths of place-based adaptation in Scotland is that it already has group of practitioners that are already promoting more participatory, inclusive, and progressive policies for adaptation.

#### 4.2.2 Weakness

**Communicating 'adaptation':** Some respondents stressed that there is a challenge of finding effective ways to communicate adaptation related science beyond climate risks.

"[] The assumption is that if you set out what the risks are people will adapt to them, and that alone will be enough to enable action. However, this broad information is challenging. What is the cost benefit of this, what are the options to adapt? [] None of that information is there in the public domain in Scotland. There have been issues about capacity building, training people, how to write adaptation plan. However, no information on the investment needed for adaptation."

"I think we have not been able to communication what good adaptation looks like. What is it that we should be adapting to?"

As often as climate change communication conveys the risks and the potential negative consequences, it often fails to inspire action. The challenges associated with this is well documented. According to (Olano, 2020), this is primarily because the information on risks appeals to reason, which is most often not the primary motivator for human behaviour.

Some respondents also mentioned that the time, scale and geography of place-based adaptation are difficult to understand and often not properly conveyed to other sectors. Uncertainty regarding the time-scale of adaptation can introduce ambiguity. The ambiguity or lack of a clear sense of urgency regarding adaptation can affect action. It can lead to a perception that adaptation is a future concern rather than an immediate priority. This may result in delayed decision-making, inadequate allocation of resources and lack of concerted efforts to implement timely adaptation measures.

**Difficulty in capturing long-term impact, legacy, and reach:** The projects that we examined for place-based adaptation share a common set of principles, such as designing adaptation strategies that suit the local context, a focus on 'place,' prioritizing the involvement of communities, and utilizing mainstream resources and community assets to implement effective adaptation. However, the evidence of their impacts and legacy remains limited. This has been attributed to difficulty in capturing effective monitoring and evaluation and lack of funding allocated for that purpose.

Many researchers and practitioners acknowledge that developing a robust Monitoring and Evaluation framework (M&E) for adaptation, unlike mitigation is challenging. Climate Mitigation projects are typically measured using quantifiable units such as greenhouse gas emissions for a standard monitoring, evaluation, and reporting. In contrast, climate adaptation requires specific adaptation strategies or combination of strategies to achieve specific objective, each with corresponding indicators to measure their effect. This is challenging for many reasons. Firstly, the impacts of climate change are typically observed over long time, making it difficult to measure the success of adaptation actions over short period. Assessing the success of such interventions requires a longer timeframe to be able to measure the damages avoided. Furthermore, measuring a success becomes more challenging when there is no event (slow onset/ rapid onset climatic disasters) to measure the damages against, which may take years to occur. Additionally, changes in societal values, socio-economic conditions, technological advances, community attitude can further complicate a long-term M&E.

There are many factors that can contribute to a desired outcome, which makes it challenging to attribute the outcome to a particular adaptation process. Another constraint on M&E is the availability of data. Data collection over a long term can be resource sensitive and require a budget that may not be allocated for this purpose.

**Ensuring representation:** Participants also mentioned challenges to engage representatives from every local group involved or willing to participate, leading to engagement of only a handful of active groups in such processes.

“How to get people to engage beyond the 'usual suspects'? Especially realising that participating takes time and has a cost (in terms of the fact that time cannot be used to do other things), which not everyone can meet.”

Respondents noted that in their experiences, local people were generally aware and engaged in adaptation initiatives, particularly in rural areas where climate change impacts were felt hard through flooding. Hesitancy was not considered as much as an issue as systematic barriers, such as lack of science, education, lack of time and resources, and their competing priorities. One of the competing priorities was considered the cost-of-living crisis.

“It is hard enough to get the people who even have a responsibility to do something to be involved in the process, let alone the people who are most vulnerable and the people who are most vulnerable are in the middle of a cost-of-living crisis. Right now, they are not.”



One respondent talked about the anticipation of climate refugees in Scotland. It may be valuable for place-based projects to recognize the flux of climate migrants in Scotland. Refugees are particularly vulnerable to the effects of climate change extremes, yet they are often excluded from decision-making processes related to mitigation, coping and adaptation. It is most likely that they do not have limited access to financial, legal, and technical support (Peters and Van Den Hoek, 2020). Therefore, place-based adaptation can provide avenues for engaging them in decision-making around things that affect them. Moreover, this might also help increase their sense of community and place attachment.

### **Addressing Social Justice:**

The concept of justice was not discussed in detail by the respondents on how adaptation relates to disparate risk across race, class, ability, and gender. While most respondents acknowledged that wealth, age could contribute to vulnerability in the context of climate adaptation, there was little evidence of specific strategies that were designed explicitly to address justice for minority groups.

“Adaptation presents a huge opportunity to address social justice issues, but I do not see it happening in the day to day yet. To some extent, I think this is because we are, in the grand scheme of things, at the beginning of these processes, but starting now is therefore even more important.”

There is limited guidance on how normative criteria on justice can be integrated into adaptation planning. Previous studies on justice in adaptation planning draws from political theories on distributive, procedural and recognition inequalities and define justice as “recognition that minority groups are structurally vulnerable and intergenerationally disadvantaged in terms of their cultural, political, and socio-economic rights” (Chu and Cannon, 2021, p.87). Chu and Cannon (2021) apply a few indicators of justice to evaluate adaptation planning in some of the cities in US (United States). The indicators were a) whether adaptation goals acknowledged and aimed to address the systemic and ingrained inequalities that arise from discrimination based on race, ethnicity, gender, ability, and sexuality; and b) whether plans incorporate anti-racist, gender transformative and socioeconomically empowering measures to combat injustices. These indicators could shed light on potential ways for place-based adaptation projects can better enable justice issues going forward

More research is also needed to identify how different normative social criteria on justice can be better taken up in place-based adaptation initiatives across Scotland.

### 4.2.3 Opportunities

Table 3 lists some of the responses from the survey questionnaire on opportunities for place-based adaptation.

**Table 3: Opportunity for place-based adaptation**

<b>Opportunities category</b>	<b>Opportunities</b>
Governance	1) Working with third sector organization using them as umbrella bodies for local place-based adaptation
	2) Tie in statutory duties for climate action, make sure local authorities use place-based approach to adaptation
Innovation and experimentation	1) Options to try different approaches in different places, especially with no regret options

	2) Local groups have more intimate knowledge of their locality and often see it different from agencies who can be blinkered by preconceived ideas.
	3) Through research /PhD Projects
Collaboration	1) In terms of the information needed to support a place-based approach and M&E, there can be greater collaboration with organizations who can access different funding streams, such as universities.
	2) There is definitely space for future collaboration and the groundwork is already there, but we need to be better at explaining why this is important and how it relates to the work related to all of the other important work being done- doing so justifies and explaining these collaborations and makes them even more successful
	3) Incorporating ongoing research with industry and government actors can allow this to be achievable
	4) Early-stage collaboration, can build partnerships, which can be followed up in subsequent projects
	5) Already existing partnerships need support, resource, and funding.
Enable policy implementation	1) Place-based adaptation can influence future policy direction by piloting new ideas and approaches
	2) Research can utilize stakeholder views from local places and balance these options with research to develop policy

Some other opportunities are explored in detail below and relate to the following topics.

#### **Strengthening adaptation discourse in ‘resilience’ policy framing might help instigate direct**

**adaptation actions:** Most respondents mentioned also that there are many interventions taking place in Scotland, which have some bearing on adaptation, but are not necessarily badged as adaptation. One respondent gave an example of Community Action Plan (CAP) from Callander, which the respondent has researched and published in Glass et al. (2021). A Community Action Plan are documents that set out a clear vision for a community with priorities supported by local people, a timeline for achieving them and options for implementing them, usually developed through participatory processes. Some of the goals in the Callander’s CAP were around local food production, biomass options, solar energy generation, requirement for spaces for outdoor activities, etc. These projects have some connection to, adaptation, but they were not primarily motivated by climate change issues. The primary motivator for such goals varied from self-sufficiency or gaining control of their own assets or enhancing enhance overall resilience, among many others (Glass et al., 2021). Some of the respondents felt that the importance of resilience in Scotland’s policy framing, has translated into some indirect actions for adaptation.

Strengthening adaptation discourse in ‘resilience’ policy framing might help instigate more direct actions for adaptation, rather than indirect. This could also be strengthened by placing statutory duties for adaptation, and making sure local authorities use place-based approach. Some practitioners mentioned that they feel that there is an increased awareness for adaptation, being fuelled by place-based adaptation initiatives through education, capacity building and trying to build network. Therefore, there is an opportunity for adaptation project incorporate education, capacity building, and network support elements into it. This may increase skills and understanding on adaptation, but also help create a supportive environment for adaptation projects.

**Capitalizing on community assets:** A defining feature of place-based approach is the need for actions tailored to the context of each place. Some interviewees mentioned the need to identify community assets and use that as a foundation for place-based adaptation, that this may be one of the ways one to make place-based adaptation context specific. Interviewees referred to community assets as not only the physical structures or places, but also importantly community leaders, groups, services, and businesses. One of the responses gave example of community groups and leadership in Callander, where community group consisted of members who had experience of risk analysis through their professional roles, and they were able to apply that in the community setting as well.

*“They brought those skills with them from their own professional context for example, members who had worked at the Hydroscheme. This meant that they brought with them the understanding of when they needed external skills, at what point of the processes was it worth investing the money in a consultant. But I felt that they did have a lot of their own skills that they had already brought to their tables, that they picked them up in other roles through part-time/full time job or volunteering.”*

These kind of members within the community can be valuable as they can provide input into adaptation projects and can determine the success of the project. However, this also risks adaptation projects to be inaccessible to other members who do not necessarily have the time, or the skill thus may inhibit inclusion.

Another respondent believes that local groups have familiar knowledge of their locality and often see it different from agencies who can be limited by their own preconceived ideas. Therefore, there is an opportunity to bring diverse groups of people on board. There is also a need to draw on knowledge from community-based development initiatives that may not have a direct focus on climate change. Place-based adaptation can leverage the benefits and knowledge gained from non-climate related projects that have enabled communities to deal with other stressors, and in doing so, have developed capacities, institutions, and models for communities to deal with a range of stresses with minimum outside support.

**Building national skills and increasing capacity at local level:** Some interviewees expressed their gratitude and acknowledgement for Adaptation Scotland’s team in providing them guidance, tools, and resources for adaptation. They have also complemented the quality of resources that are available and believe those resources have lessons from different places and collaboration in them. Therefore, believe Adaptation Scotland, as a “national expertise on adaptation.” This was echoed multiple projects. However, some interviewee also mentions that there is not enough expertise or adequate skills on adaptation at the local level.

*“[] It makes me wonder if Adaptation Scotland are able to fund the person who will be employed within the council to drive some of the adaptation work for 12 months, or even something like that. I think that would result in better results. We would have meeting, and agreed on some actions, then it was immediately on us at this end to deliver it. And there wasn’t any staff resource.”*

Another interviewee referred to the limited amount of money for adaptation in Scotland and felt that one of the best uses of money would be to build capacity in the adaptation Scotland programme to that they can further support different adaptation partnerships.

**Diverse leadership:** Diverse leadership also presents a significant opportunity for place-based adaptation. The need for diverse leadership in adaptation goes beyond relying on local authorities, or local authority led- structures, for climate action. It was recognized that it important to avoid

placing the sole responsibility for resolving all issues on local authorities, as this perception can undermine other partners, leading to a diminished sense of their own contributions. It was also noted local authorities could sometimes be bound by existing regulations, bureaucratic processes etc. that make it challenging to implement and experiment with innovations for adaptation. This makes a case for seeking out collaborations with entities that have the expertise in navigating regulatory landscape as well as the skills to effectively introduce and test innovative ideas within existing constraints. This also makes a case for considering local authorities as collaborative partners, rather than lead partners, a different perspective may emerge that encourages meaningful engagement and collaboration among all parties involved. This approach allows for a more inclusive and effective collaboration, promoting a sense of shared ownership. Diverse leadership can play a crucial role in promoting shared power by distribution of decision-making authority, balancing multiple interests. This might help enhance the legitimacy and credibility of place-based adaptation initiatives.

#### 4.2.4 Threats

A number of threats that are not controllable by place-based adaptation projects have been identified including budget cuts to local council, lack of coherent policies.

**Information flow:** Sharing information is prerequisite for achieving successful adaptation, among other factors. It is essential to compile and refine information on climate change, its impacts and potential adaptation in ways that are tailored to different audiences. The availability of local climate and risk assessment are often considered as a barrier to effective climate action. Place-based adaptation can include local data collection, local level monitoring of climate change, local diaries, and records on how the environment is changing over time, so that it can inform climate action. Some interviewees emphasized as much as the information itself, the sharing of the information was also considered a big gap. This was often being talked about in reference to some actions being dependent on public sector partners, who were not good at sharing updates on the delivery of these actions.

**Scale** Place-based adaptation has been acknowledged to provide flexibility to scale and locate it to a specific context, leaving room for trying different innovations in governance and participation. Having said that, Scotland does not have a regional governance scale, established through legislation, power, and responsibilities, rather regional adaptation takes places with multiple councils, different organization and strategic partnership that operate at different levels of governance, which can make implementation at a regional scale challenging. Interviewees acknowledge another challenge associated with regional adaptation projects was the difficulty in having engagement at community level because of the scale, compared to project/community level adaptation. Regional adaptation, as with smaller scale adaptation, has its benefits. There are obviously challenges to having community engagement and participation at big scale project, and little is known about why it is difficult to achieve people's participate for regional adaptation beyond the scale being too big. More questions remain in terms of how big the project should be that it is justifiable to not engage with a wide range of communities. Place-based adaptation should be tailored to the specific needs of the community and should provide spaces for community members to engage with local authorities and other stakeholders. Place-based adaptation must be people-centric, because if there is not enough engagement, it become system centric (infrastructure, transport etc.) and then it comes down to numbers and money and we lose that people-centric approach that is core to place-based adaptation.

**Financial constraints:** The analysis showed that maintaining adequate financial resources and capacities for adaptation was an obstacle for implementing and mainstreaming place-based

adaptation in Scotland. Local governments are crucial enablers to all these climate action including net zero. However, local governments do not set the statutory duties or do not provide dedicated resources to deliver it and that is true for adaptation as well.

“You need somebody to coordinate and lead the approach, and most councils are under public sector, under pressure and under budget cuts.”

“When council’s budgets are cut, climate adaptation may be deprioritized or cancelled altogether, because they have to do schools and social care, and they’re not left with a lot of money.”

In February 2023, BBC reported that Scotland’s councils are facing £700m funding gap in their budgets for the upcoming year (Campbell, 2023). It also reported that councils were considering major cuts to local jobs, services, and assets. Some of these cuts have already been observed, and the effects of this was observed by the place-based adaptation projects in Glasgow and Galloway, as mentioned by the interviewees.

The budget cuts to local council can lead to increased competition for limited resources, making it difficult for communities with fewer resources to access the funding and support they need to implement climate adaptation measures.

Interviewees also mention that adaptation action is happening across all levels and scale, all over Scotland, one of the threats is that is being carried out by piecemeal funding that is inherently unsystematic and will not be enough to achieve transformational adaptation that is required. Some respondents believe this has led to lack of consistency and coherency in implementation of adaptation action, with different projects “testing and carrying out many approaches, and not having a comprehensive and systematic nation-wide approach.”

**Lack of coherent policy:** Even though the Scotland’s policy landscape at national level provides a good avenue to carry out place-based adaptation, respondents also mentioned that one of the threats to Place-based adaptation was the lack of coherent policy across different levels.

“Although extremely important work is being done by the Highland Council, there is not nearly enough support for this agenda to produce the policy that it needs to in order to have this work done”

There were also concerns that ‘Net Zero Policy’ and ‘just-transition’ have a bigger lead over adaptation policy and practice. The just transition between net zero and climate adaptation are closely linked and are comprehensive responses to the impacts of climate change (CCC, 2022). Some of the linkages are addressing social and environmental justice. NetZero and climate adaptation are important efforts to address climate change impacts but refer to different aspects of the response. There have already been some recommendations to the Scottish government to include adaptation within just transition framework (CCC, 2022). Respondents said that opportunities for collaboration are being missed by not finding linkages and synergies between the two policy agendas.

One interviewee mentioned that national policies on climate action has limited impact at community level. At the national level, there are policies and legislation that are relevant to community actions in addressing climate change. Sometimes, these policies lead to some funding being available for local climate action, however, much of their requirements are difficult for communities to access and understand due to factors such as language, format, and complexity, discouraging future engagement.

**Uncertainty:** There was also concerns that since climate change data often involves uncertainty, as it based on complex models and predictions that are subject to various factors and variables. The uncertainty in the data can lead to some assumptions being made on personal experiences, as people may use their own observations to fill the gaps by the uncertain data.

“I think knowledge gaps are a threat because this work requires such a high level of technical details, sometimes, that there is a risk that these gaps will be assumed. I think the data is usually there, but needs to be relied on, as opposed to just going off personal experiences”

Some uncertainty can also arise at local level, therefore perceived to be a challenge for place-based adaptation. It is important to recognize that while personal experiences and observation can be valuable, they should be considered in the context of the broader scientific understanding of climate change.

#### 4.2.5 Covid context

One of the barriers for effective collaboration and engagement has been identified as the societal fatigue brought about by COVID and cost of living crisis, among other societal challenges. During the pandemic, many employees in the public sector, saw an increase in their workload, had their roles changed, had to adjust to the demands of working remotely while delivering high quality public services. There are studies that report alarming rates of psychological distress and compassion fatigue among state and local officials due to the Covid -19 pandemic (Scieoura & Linos, 2022). Some practitioners felt that this is potentially one of the reasons for not having a long-term commitment and action at local level. Engagement and commitment from actors at local level.

In some cases, they have felt that there is a genuine desire for local organizations and actors to be involved in place-based adaptation projects, but things do not advance much beyond the initial desire from local actors.

“I think we are at a time when people in general are really overwhelmed at work, including our partners. People are coming out of a pandemic. There is surely the initial engagement, then people get back to their lives, where they have so much to do, and this is still one thing that is not just quite important in their mind.”

Competing priorities, time constraints can prove to be barriers for meaningful long-term partnership and engagement for adaptation.

Conversely, some respondents felt that because of Covid-19 pandemic lockdown, there has been an increase in community support network enhanced through accessible resources such as communication tools like Facebook and WhatsApp groups<sup>3</sup>. For example: *Linlithgow Family*<sup>4</sup>, a group of people trying to grow food at their own gardens and on windowsill. The group was founded by Narrowboat Farm in 2020, in response to the Covid-19 pandemic and the overwhelming demand for local produce. These groups have allegedly been proven effective in providing targeted and timely support to most vulnerable members in the local community, leading to stronger connections, a greater sense of community spirit and increased engagement. This can be particularly important for place-based adaptation efforts. There is an opportunity to continue supporting these groups beyond the COVID-19 pandemic. Implementing a flexible policy that enables the support of social resources would significantly enhance community adaptive capacity and empower

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<sup>3</sup> <https://www.volunteerscotland.net/wp-content/uploads/2022/11/Research-on-Mutual-aid-groups-in-Scotland.pdf>

<sup>4</sup> <https://www.falkirkherald.co.uk/health/coronavirus/linlithgow-award-winner-keeps-growing-in-the-family-2935648>

communities to take local actions based on their needs, rather than being limited by funding constraints.

## 5.0) Conclusion

The study shows that the place-based adaptation initiatives have been and continue to be instrumental in promoting place-based actions in Scotland. Despite the weaknesses and barriers, the benefit of taking a place-based approach was emphasized. There is a growing recognition that addressing climate change require complex social and economic transformation, and a place-based approach can be an effective way to achieve this.

The framing of 'adaptation' on community 'resilience,' and the framing of 'place' on Scotland's policies such as National Performance Framework and National Programme for Government, demonstrates the increased political commitment to accept and support place-based actions. There is also a recognition that a pathway to NetZero requires a comprehensive and integrated approach that harnesses the synergies and interdependencies between adaptation, mitigation, and other SDG (Sustainable Development Goals) goals. Therefore, there is more demand for collaboration across sectors as well as innovative approaches of financing, governance, and democratic practices.

There is also a lot of emphasis on the significance of climate justice, shared power and capacity building. It was recognized that in order to ensure effective multi-sector and multi-stakeholder partnership, it is crucial to take into account power dynamics, and a shared leadership approach, where everyone is regarded as equal partners. Meaningful and impactful place-based adaptation necessitates genuine collaboration; among local authorities, communities and the border public sector etc. are recognised equal partners alongside other stakeholders.

Overall, there is a demand for improvement and a number of opportunities to invest in place-based adaptation (through more research, collaboration with education institutions, political will, and commitment) to render them a widely acknowledged and powerful approach to promote climate resilience. Further work in improvement in approaches should also focus on aspects such as making policy and funding information accessible to local community groups.

**Next steps:** The findings from the SWOT analysis forms a basis for a roundtable discussion. Through a round table, we are seeking for recommendations on

1. What are the particular challenges around PBA? How can communities have a voice when initiating PBA, and remain influential throughout the process and beyond?
2. What are the right skills for different stages of building resilience, what is missing?
3. What are the future science challenges for adaptation and how can they be integrated within the development of policy?

The outcomes of the roundtable will be included in the report.

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## APPENDIX

## Respondents' affiliations (present or past)

<b>S.N</b>	<b>Organization</b>
1	Sniffer
2	University of Edinburgh
3	Climate Ready Clyde
4	Climate Ready Ken
5	Galloway and Southern Ayrshire UNESCO Biosphere
6	SEPA
7	Nature Scot
8	PCAN
9	The MGSDP
10	Highland Adapts
11	Green Action Trust
12	The Open University
13	Edinburgh Climate Change Institute
14	Scotland's Rural College
15	Aberdeen Adapts
16	Glasgow City Council
17	Galloway Glens Landscape Partnership

## Some relevant case studies on place-based approach relevant to Scotland.

<b>S.N</b>	<b>Document</b>	<b>Author</b>
1	Facilitating local resilience: case studies of place-based approaches in rural Scotland	Glass, Jayne; Atterton, Jane; Maynard, CM; Craigie, MC; Jones, SJ; Currie, Mags; Pinker, Annabel; McKee, Annie J
2	Place-based policies and the future of rural Scotland	Atterton, Jane; Glass, Jayne
3	What is place-based rural policy and what evidence base does it need? Research and knowledge exchange activities	Jonathan Hopkins, Andrew Copus, Ruth Wilson, and Jane Atterton