

SCOTTISH CLIMATE CHANGE ADAPTATION PROGRAMME: PROGRESS REPORT 2023

Fourth annual progress report on the “Climate Ready Scotland: Scotland’s Climate Change Adaptation Programme 2019 to 2024”

May 2023



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1. Introduction and context

Scotland's climate has already changed. The global climate emergency has led to more extreme weather events and rising sea levels. These trends are projected to continue and intensify. As a nation, our social and economic prosperity is increasingly reliant on how well we adapt to these current, and future, impacts of global climate change.

This fourth annual report to the Scottish Parliament provides an assessment of progress under the Scottish Government's current statutory programme for building resilience to the impacts of climate change: [Scottish Climate Change Adaptation Programme 2019-2024](#).

How has Scotland's climate already changed?

Over the last few decades, Scotland has experienced a warming trend, shifting rainfall patterns and rising sea levels:

- All of the UK's top 10 warmest years, in the time series from 1884, have occurred this century. 2022 was Scotland's warmest year on record.
- The annual average rainfall in the last decade (2010-2019) was 9% wetter than the 1961-1990 average, with winters 19% wetter.
- Mean sea level around the UK has risen by approximately 1.4 mm/year from the start of the 20th century.

The locked-in effects of climate change are already causing impacts for how we manage our water, maintain and develop our national infrastructure, restore our biodiversity, protect against soil degradation, and deliver health, social care and other essential services. These impacts are having significant economic and social repercussions for Scotland.

How will Scotland's climate continue to change?

The changes in climate that we are already experiencing are projected to continue and intensify:

- Average temperatures will increase across all seasons.
- Typical summers will be warmer and drier.
- Typical winters will be milder and wetter.
- Intense, heavy rainfall events will increase in both winter and summer.
- Sea levels will rise.
- There will be reduced frost and snowfall.
- Weather will remain variable and may become more variable.

For further information on these changes, see Adaptation Scotland's [summary of the UK Climate Projections for Scotland](#) (published January 2021). This resource is intended to help build common understanding on the future climate that Scotland will experience.

1.1 Statutory framework for adaptation

The Climate Change (Scotland) Act 2009 sets the statutory framework for Scotland to adapt to climate change. The legislation requires a programme of policies and proposals for climate change adaptation to be set out every five years. These programmes must address risks identified in the statutory UK Climate Change Risk Assessment (CCRA), which is also updated every five years, based on independent expert advice around the evidence on current and expected future climate impacts.

This is the fourth annual progress report on the second Scottish Climate Change Adaptation Programme since its publication in Autumn 2019. This report is published in line with Scottish Ministers duties under section 54 of the Climate Change (Scotland) Act 2009. Copies of previous progress reports can be found on the Scottish Government website.

1.2 Scotland's current adaptation programme (SCCAP2)

The second Scottish Climate Change Adaptation Programme (SCCAP2) sets out over 170 policies and proposals (and an associated research programme) to respond over the period 2019 to 2024 to the risks for Scotland identified in the 2017 UK Climate Change Risk Assessment (CCRA2).

SCCAP2 takes an outcomes-based approach, derived from both the UN Sustainable Development Goals and aligned to Scotland's National Performance Framework. This approach is designed to integrate action on adaptation into wider Scottish Government policy and service delivery. There are seven high-level outcomes within SCCAP2, covering Scotland's communities, businesses and natural environment as well as our engagement with international partners. Chapters 4 – 10 of this annual progress report provides examples of progress – since the time of the last report in May 2022 – in implementing policies and proposals that contribute towards each of the SCCAP2 outcomes.

This progress report relates primarily to the ongoing delivery of the SCCAP2 programme. However, it is also published in the context of the early stages of developing the next statutory Adaptation Programme, as summarised below and which is due to be finalised in Autumn 2024.

1.3 Updated Climate Change Risk Assessment (CCRA3)

In June 2021, the Climate Change Committee (CCC) published its third Independent Assessment of UK Climate Risk, including a Summary for Scotland report. The CCC's assessment found that action to improve resilience across all UK nations is generally failing to keep pace with the increasing risks associated with the impacts of climate change.

The CCC's risk assessment identifies 61 risks and opportunities in total, and is underpinned by a Technical Report. This updated independent evidence base and advice on climate risks has informed an updated formal, statutory UK Climate Change Risk Assessment 2022 (CCRA3) laid before the UK Parliament in January

2022. Through the CCRA3, the Scottish Government (as well as the administrations of the other UK nations) have formally accepted the CCC's risk assessment in full.

The publication of the statutory CCRA3 triggered the duty on Scottish Ministers under the Climate Change (Scotland) Act 2009 to begin the process of developing the next Scottish Climate Change Adaptation Programme, in response to the updated risk assessment. Further information on this process is set out in the "Next Steps" section below. In the meantime, we will continue to deliver the SCCAP2 programme alongside developing new measures to further strengthen the response.

1.4 CCC Independent Assessment of SCCAP2

The CCC published its first independent assessment of SCCAP2 [Is Scotland climate ready? – 2022 Report to Scottish Parliament](#) and accompanying advice [The just transition and climate change adaptation](#) in March 2022. The CCC's high level conclusion in its independent assessment is that, whilst the vision for a well-adapted Scotland set out in SCCAP2 is welcome, more needs to be done to translate ambition into actions that are commensurate with the scale of the challenge. The Scottish Government has welcomed the CCC's independent assessment and an initial response to its recommendations were provided in the 2022 progress report.

The Climate Change (Scotland) Act 2009 requires two phases of independent assessment be undertaken within each 5 year planning cycle on adaptation. A second phase of assessment of the SCCAP2 programme is anticipated from the CCC before the end of 2023 and ahead of public consultation on SCCAP3 in early 2024.

1.5 The role of the Adaptation Scotland programme

The [Adaptation Scotland programme](#) is funded by the Scottish Government to support capacity building and action on climate adaptation by the public sector, including Local Authorities, businesses and communities across Scotland. This work includes developing Scotland's pioneering place-based approach to adaptation and promoting and supporting the use of the award-winning Adaptation Capability Framework. The contribution of the programme's activities to delivering the high-level outcomes in SCCAP2 is summarised in each chapter of this report.

2. Scottish Ministers' assessment of progress towards implementing the objectives, proposals and policies set out in SCCAP2

The overall assessment of Scottish Ministers is that whilst progress continues to be made in implementing SCCAP2, it is also clear that still more needs to be done to build resilience in Scotland as part of our just transition.

The [Intergovernmental Panel on Climate Change's \(IPCC\) Synthesis Report](#) published in March 2023 is clear that progress on global adaptation action is not yet keeping pace with the worsening impacts. This is a shared global challenge, which applies here in Scotland too.

Chapters 4 – 10 of this report provides examples of progress towards the SCCAP2 policies across the seven high-level outcomes since May 2022, including the examples below:

- The new [Scottish 3-day Flood Forecast](#) was launched in February 2023 giving the earliest possible indication of when and where flooding is expected.
- As published in December 2022, the new [Scottish Biodiversity Strategy](#) sets out our vision to 2045 and the long term outcomes needed in Scotland to address the ongoing decline in biodiversity including ensuring our natural environment, our habitats, ecosystems and species, are resilient and adapting to climate change.
- The first track of the National Test Programme ‘[Preparing for Sustainable Farming](#)’ began in April 2022 followed in December 2022 with the launch of [MyHerdStats](#) and in February 2023 with support for Animal Health and Welfare activity. It is designed to help farmers and crofters future proof their farms, to create environmental and economically resilient businesses and to start to prepare now for future conditionality.
- Coastal Change Adaptation Planning guidance was published in February 2023 on the [Dynamic Coast](#) website, and £1.6 million was allocated to local authorities for coastal change adaptation in 2022-2023.
- NatureScot’s investment in restoration in 2022-2023 is on track to deliver our target of putting 4,700 hectares of degraded peatland on the road to recovery.
- From February 2023, building regulations address overheating in new homes and some other new residential buildings, with further consideration to be given to this topic as part of future review of energy and ventilation standards.
- The [NHS Scotland climate emergency and sustainability strategy: 2022-2026](#) was published in August 2022 setting out plans to adapt to climate change. Starting in November 2022, each Health Board has been required to publish an annual report, approved by its Chief Executive, summarising its progress. Starting in 2023, the Scottish Government will publish an annual report setting out the progress being made across all of NHS Scotland in implementing this strategy.
- To combat the effects of drought, £20 million will be invested in a pilot programme to extend the public water networks to connect with households reliant on private supplies.
- Scottish Government continues to fund the Adaptation Scotland programme to support capacity building and action on adaptation by the public sector, businesses and communities across Scotland.

3. Next steps

3.1 The next statutory Adaptation Programme

Alongside continuing to deliver SCCAP2, the Scottish Government is now developing Scotland's next statutory climate change adaptation programme which will address the climate risks facing Scotland as identified in CCRA3.

It is intended that the programme builds on the outcome-led approach taken in SCCAP2, but with an additional level of framing around sub-outcomes that reflect

higher level of detail with regards to the risk-management ambitions of the highest priority sectors and action areas.

As part of the development of the next programme:

- Targeted engagement with stakeholders and delivery partners will take place over Summer and Autumn 2023.
- In line with statutory duties, commissioning of a second CCC independent assessment of the current SCCAP2. We expect to receive the report of this independent assessment by the end of 2023 and its findings will inform the next programme.
- Public consultation on the next programme is planned for early-2024 with the aim of publishing a final statutory programme in Autumn 2024.
- A monitoring framework is being developed, using a “theory of change” approach, which will identify indicators that can provide some quantitative assessment of progress over time.
- We are also exploring options for an early response in the highest priority risk areas identified by the CCC.

The following chapters of this annual progress report provide examples of progress – since the time of the last report in May 2022 – in implementing policies and proposals that contribute towards each of the SCCAP2 outcomes.

4. Progress on SCCAP2 ‘Communities’ outcome

SCCAP2 Outcome 1: Our **communities** are inclusive, empowered, resilient and safe in response to the changing climate.

This outcome has two sub-outcomes covering the social aspects of community (such as empowerment, engagement and adaptability) and the physical aspects of community (including the built and historic environment). Aspects related to vulnerable people within communities are addressed under Outcome 2.

Examples of progress on cross-cutting policies in support of this outcome

Capacity-building and support through the Adaptation Scotland programme –

In March 2023 the [Adaptation Scotland Programme](#) published a Community Climate Adaptation Routemap. The resource was developed in partnership with the Development Trusts Association Scotland, the Highlands and Islands Climate Hub, the North East Scotland Climate Action Network and the Scottish Communities Climate Action Network. It provides practical actions that communities can take to build resilience and prepare for climate change as part of addressing a wide range of local projects and priorities.

A focus on supporting locally led adaptation which involves and empowers communities cuts across many of Adaptation Scotland’s projects. This includes work with the Highland Adapts initiative to include local knowledge and lived experience as a central part of the Highland regional climate risk assessment. Adaptation Scotland also works with the Outer Hebrides Community Planning Partnership Climate Change Working Group to build support for a climate rationale, a case for action and to support establishment of a Community Interest Company which will contribute to delivering locally led action in the years ahead.

Fourth National Planning Framework – The [National Planning Framework 4](#)

(NPF4) was adopted on 13 January 2023 and is now in force. This followed a revised draft being laid in Parliament for approval in November 2022, which built on the previous rounds of public engagement and Parliamentary scrutiny since 2020. The adopted version is that as laid in Parliament for approval. NPF4 sets out how our approach to planning and development will help achieve a net zero, sustainable Scotland by 2045:

- The approach addresses a range of risks from climate change including: flooding, coastal vulnerability, temperature, and access to drinking water.
- Policy 1 ‘Tackling the climate and nature crises’ supports a nature-based approach is for adaptation to risks from climate change.
- Policy 2 ‘Climate mitigation and adaptation’ is clear that new development will be sited and designed to adapt to current and future risks from climate change; and that measures to support climate adaptation measures for existing developments will be supported.
- The approach supports the Place Principle to foster a collaborative, place based response to delivering sustainable and resilient places and communities and is clearly linked to and informed by the Climate Change Adaptation programme.

NPF4 is now part of the statutory development plan, informing planning system decision making.

The Place Principle – The new [OurPlace.scot](https://www.ourplace.scot) website to support the Place Principle was launched in January 2022. Aimed at communities as well as statutory, business and third sector organisations, it continues to include up-to-date content, case studies and guidance to support place-based approaches, including to adaptation.

The Place Standard – The improved version of the main Place Standard tool incorporates enhanced content to strengthen the contribution towards engaging communities and stakeholders around climate change at a local level. It was launched on the [OurPlace.scot](https://www.ourplace.scot) website in autumn 2022 alongside guidance and resources to support its use.

The Place Standard with a climate lens – The new “[Place Standard with a climate lens](#)” toolkit and resources were launched during Climate Week in September 2022. It was created by Scottish Government in partnership with Sniffer, Adaptation Scotland, Sustainable Scotland Network, Architecture and Design Scotland, Public Health Scotland, and others, to support projects with a specific climate-action focus to take a place-based, collaborative, and community-led approach. In October 2022 over 50 people from a range of organisations and communities across Scotland joined an over-subscribed online workshop to support ‘early adopters’ interested in using the tool. The partners continue to actively promote the tool through webinars, presentations and widely published articles and there continues to be a lot of interest in applying the tool to climate adaptation and mitigation both from Scotland and abroad. A [supporting animation](#) which explains, in a simple and engaging way, the key issues and how a place-based approach to climate action can contribute to better outcomes was also completed in early 2023.

Examples of progress on policies in support of sub-outcome that: "People in Scotland's diverse communities are informed, empowered and adapting to climate change"

Community Flood Volunteer Project – We continue to support citizen science through grant funding for The Conservation Volunteers Scotland. Through community led citizen science flood monitoring projects important long term data is gathered for the councils. We continue to work with councils to extend the projects to new communities. This helps raise awareness of flood risk and the wider climate change agenda at a local level.

RiverTrack – is a local flood alerting tool that can be used by communities without a formal SEPA flood warning scheme. Working with the Scottish Flood Forum and SEPA we are encouraging more communities to consider the Rivertrack system which can alert home and business owners to take action prior to a flood event. This includes deploying flood guards and moving possessions upstairs which helps to reduce flood damage

Fire and Rescue Framework – The [Fire and Rescue Framework for Scotland 2022](#) published in March 2022, sets out Scottish Ministers' expectations of the Scottish Fire and Rescue Service (SFRS). SFRS continue to work with other public sector partners and communities to support action to address the climate emergency including the challenges of more extreme weather events. SFRS are working to ensure Scotland's communities are resilient and safe in response to the changing climate.

Examples of progress on policies in support of sub-outcome that: "Scotland's buildings and places are adaptable to climate change"

Additional investment in flood risk management – In addition to providing local authorities with £42 million annually for flood protection schemes, the Scottish Government have committed to invest an extra £150 million in flood risk management over this Parliament – representing a 70% increase in the flooding budget.

Flood Risk Management Plans – SEPA published the second [Flood Risk Management Plans](#) (formally called Strategies) in December 2021. The plans set out flood risk management actions for priority areas across Scotland, taking into account future flood risk information. The plans were developed in partnership with local authorities and other responsible authorities.

Local Flood Risk Management Plans – Local authorities published the second Local Flood Risk Management Plans in December 2022. Local Flood Risk Management Plans take each Flood Risk Management Plan and turn it into a local delivery plan.

Property Flood Resilience – We continue to work with a range of stakeholders on the Property Flood Resilience Delivery Group to deliver the Living with Flooding action plan. We also continue to raise awareness of the Construction Industry Research and Information Association (CIRIA) Code of Practice for property flood resilience – a revised Code and short guide for property owners to help them make flood resilient repairs after a flood was published in January 2021. Flood resilient repair can lessen flood damage, reducing the time spent in temporary accommodation and the health impacts of a flood.

SEPA Flood Maps – SEPA's flood maps continue to undergo regular update and improvement. The public-focussed [flood risk management map viewer](#) launched in November 2020 continues to improve access to flood risk information. SEPA are also progressing with updating coastal flood maps. This includes taking account of wave action where appropriate / feasible.

Water Resilient Places Policy Framework –The Scottish Government continues to work with Scottish Water, SEPA and local authorities to embed the principles of the [Water Resilient Places Policy Framework](#) published in February 2021. This focuses on how we can optimise the use of our greenspace in our towns and cities to bring multiple benefits to communities, including managing surface water flooding. Drainage services policy development is currently underway in Scottish government with a view to making legislative changes to drive strategic surface water drainage

and rainwater management in our urban areas. The principles and recommendations of the water Resilient Places Policy Framework are informing this work.

NPF4 was published in November 2022 and *Policy 20 – Blue and Green Infrastructure* is set out to protect and enhance blue and green infrastructure and their networks by establishing blue and green infrastructure as an integral part of early design and development processes. In September 2022, the Minister for Environment, Biodiversity and Land Reform hosted the *Creating Water Resilient Places* event that brought together chief executives and other senior leaders from across Scotland's eight cities and key government agencies to discuss the opportunities and challenges of making our urban areas water resilient places to help them respond to climate change. Local authorities and government agencies committed to exploring the opportunity to integrate water resilient placemaking into the Scottish Cities Alliance programme of work.

Heat in Buildings Programme (previously Energy Efficient Scotland) – The Scottish Government published its [Heat in Buildings Strategy](#) in October 2021 which updates the 2018 Energy Efficient Scotland Route Map. Our delivery programmes continue to prioritise 'fabric first' but increasingly deliver a wider range of improvements as part of a 'whole house' approach. Energy efficiency measures, such as external wall insulation, and passive measures, such as ventilation and shading, can improve the resilience of Scotland's buildings to the increased adverse weather projected as a result of climate change which might cause increased demand for both heating and cooling, as well as reducing greenhouse gas emissions. For some communities and fuel poor households we are also investing in renewables and battery storage, which can help to reduce energy demand but also improve resilience.

Advice and support under the Heat in Buildings Programme –The Scottish Government continues to provide support, including grants and low costs loans, to property owners to help them retrofit their properties to make them more energy efficient and convert to zero emission heating. Home Energy Scotland and Business Energy Scotland continue to offer impartial advice on energy retrofit and energy saving measures. Additional funding is also available through the CARES programme to support some of Scotland's most remote and rural off-grid communities to upgrade their energy systems and make them more resilient and sustainable for the future.

Building regulations and standards – [Public consultation on improvement to energy and environmental standards](#) (as set through building regulations) took place between July and November 2021. The Scottish Government's review programme set out plans for the publication of revised standards for April 2022 and from 1 February 2023, building regulations address overheating in new homes and some other new residential buildings, with further consideration to be given to this topic as part of future review of energy and ventilation standards.

Tidal Flooding on the Clyde – In May 2022, ClimateXChange (CXC) published a [report on tidal flooding on the Clyde](#) which set out to explore the evidence base to help design and apply adaptation (investment) pathways to the tidal reach of the Clyde drawing on international practice and UK guidance. The report confirmed the

approach to adaptation needs to be transformation-oriented, with place making and resilience at the heart of investment decision making and future pathway design.

Our Place in Time: the Historic Environment Strategy for Scotland (OPiT) – Climate Change Working Group – The existing strategy for the historic environment in Scotland, Our Place in Time 2014-2024 (OPiT), is currently being reviewed and refreshed in response to the changed strategic context in Scotland, including the announcement of a climate emergency. During the Strategy’s public consultation, ‘Enabling the transition to Net Zero’ was proposed as one of its three priorities which cover adaptation measures needed. [The Green Recovery Statement](#), published by HES in April 2022, includes the land management of the historic environment as a key principle in helping to building resilient landscapes that are adaptive to climate change. The National Trust for Scotland, a member of the CCWG, this year appointed its first Climate Change Coordinator whose work scope will include adaptation.

Historic Environment Policy for Scotland (2019-2029) – We have started a strategic review of our [Managing Change guidance series](#), including looking at themes arising from NPF4 as well as other policy areas such as forestry and agriculture. The review will identify areas where the sustainable management of the historic environment will support and enable positive action to tackle the twin nature and climate crises. We have recently consulted on [draft guidance on Fire and historic buildings](#), and have set new consultation standards with topic specific questions on climate adaptation.

Historic Environment Scotland Climate Change and Environmental Action Plan (CCEAP) –

HES published its Summary Sustainability Report 2021-2022 as part of its [Annual Report and Financial Statements](#) in November 2022. In 2022, the adaptation area greatly benefited from a partially dedicated staff resource as they were joined by a fixed-term Biodiversity and Climate Change Coordinator and Sustainable Travel Officer (seconded from Sustrans) to progress the Biodiversity and Landscape and Sustainable Travel themes.

Funding from the Royal Society of Edinburgh enabled the continued roll-out of the [application of the Climate Vulnerability Index \(CVI\) methodology](#) across Scottish World Heritage Sites. We also published the results of the CVI assessments for the [Old and New Towns of Edinburgh](#) and [Frontiers of the Roman Empire: the Antonine Wall](#). We hosted CVI Foundational Training in Edinburgh in September 2022, which was delivered by our JCU partners and attracted national and international participants.

Research for Buildings and Heritage Assets – HES published a [technical paper on Architecture and Health in Traditional Buildings](#) in May 2022 discussing how buildings were designed to enable proper ventilation. It also considers how good ventilation can help to prevent airborne diseases, build-up of chemical compounds and CO₂ and overheating, the last of which is essential to effective climate change adaptation. HES also published a [technical paper on Hygrothermal Properties of Scottish Masonry Materials](#) in October 2022 describing research on the hygrothermal properties of Scottish masonry so that they can be correctly input in relevant

modelling software such as WUFI. Such practical research is essential to inform moisture risk management in the context of energy efficiency retrofit and a changing climate.

How the Adaptation Scotland programme is supporting this outcome:

Adaptation Scotland continues to support cities, regions, islands and localities to increase resilience and adapt to climate change. This includes contributing to the Edinburgh Adapts initiative which has developed a new city wide climate risk assessment and is co-developing a city wide adaptation plan which will go out for public consultation in summer 2023. We have also provided valuable expertise to support development of the Place Standard through a [Climate Lens tool](#) and draft guidance on coastal adaptation.

We completed work with the Tyndall Centre for Climate Research to identify how the OpenCLIM framework can support regional climate risk assessments in the Highlands and Edinburgh and South East Scotland. Following this we secured ongoing support from the Tyndall Centre to apply the framework in the Highlands in support of the regional climate risk assessment.

5. Progress on SCCAP2 'People' outcome

SCCAP2 Outcome 2: The people in Scotland who are most **vulnerable** to climate change are able to adapt and **climate justice** is embedded in climate change adaptation policy

This outcome has two sub-outcomes divided along the themes of vulnerable people and health and social care.

Examples of progress towards policies in support of the sub-outcome that "the most vulnerable to climate change in Scotland are engaged, empowered and able to adapt to climate change"

Scottish Flood Forum – The Scottish Government continue to grant fund the [Scottish Flood Forum](#) to work with communities at flood risk. The Forum's aim is to reduce the impacts of flooding on individuals and communities, through providing immediate support following a flood and by establishing a network of community resilience groups in flood risk areas to equip communities to cope with the impacts and threat of flooding. The grant was increased to £220,000 in 2022-2023. This enables the Forum to support and build resilience in communities at flood risk and manage the work of the Property Flood Resilience Delivery Group.

The Scottish Flood Forecast – The [Scottish Flood Forecast](#) was launched by the Minister for Environment and Land Reform on 8 February 2023. It is a new map based, national forecast produced by the Scottish Flood Forecasting Service, a partnership between SEPA and the Met Office. It uses the colours yellow, amber and red to show whether flooding is likely to happen over the next 3 days and describes what the impact might be, as well as providing information on what to do next.

Green Infrastructure Fund – The European Regional Development Fund (ERDF) Green Infrastructure Fund continued to support green network expansion in Scotland's most deprived urban areas. These multifunctional nature-based solutions promote adaptation for nature and people together. There are 12 projects with contracts (around £31 million total investment). Eight have completed, with the remainder due by end June 2023. All projects in this very competitive fund provide a broad range of adaptation benefits as part of nature based solutions. These include urban cooling; reducing flood risk by using rainwater as a positive amenity; creating nature networks; enabling safe active travel; healthy recreation in high quality greenspace; and community food growing. The sites attract heavy use, with resounding positive feedback, further evidencing the need for this type of intervention. They have won multiple awards and attracted international interest in how Scotland is using multi-functional greenspace for adaptation, delivering for nature and people simultaneously and successfully.

Examples of progress towards policies in support of the sub-outcome that "Scotland's health and social care is ready and responding to changing demands as a result of the changing climate"

NHS Scotland Climate Emergency and Sustainability Strategy – The [NHS Scotland climate emergency and sustainability strategy: 2022-2026](#) was published

on 16 August 2022. It sets out plans for NHS Scotland to adapt to climate change and to better contribute to the United Nation sustainable development goals. It has been developed by the Scottish Government and NHS Scotland Assure, and was subject to full public consultation. The strategy includes a set of policy and actions that NHS Boards will take to adapt to climate. Starting in November 2022, each Health Board has been required to publish an annual report, approved by its Chief Executive, summarising its progress against the aims and targets set out in "[A Policy for NHS Scotland on the Climate Emergency and Sustainable Development](#)" (DL (2021) 38) and the actions set out in this strategy.

NHS Scotland has developed a National Sustainability Assessment Tool (NSAT) which all Health Boards use on an annual basis to measure their progress across sixteen different areas of sustainability. The annual report will include the Health Board's NSAT score and highlight any examples of best practice which could be adopted across the whole of NHS Scotland. These reports will form a key part of each Health Board's annual ministerial review. Starting in 2023, the Scottish Government will publish an annual NHS Scotland Climate Emergency and Sustainability Report setting out the progress being made across all of NHS Scotland in implementing this strategy.

NHS Board Climate Change Risk Assessments and Adaptation Plans – In 2021, Health Facilities Scotland (HFS) reviewed NHS sites identified as being at high risk of flooding and recommendations were made to the respective NHS Boards. This review built on a national study on the impacts of climate change on NHS assets undertaken by HFS in 2016. Flooding and overheating are identified as the climate risks most likely to have the biggest effect on the estate and operations of NHS Scotland as well as increasing patient demand. As at April 2022, there was a commitment for all Health Boards have completed Climate Change Risk Assessment and Adaptation Plans for their areas.

Air Quality – Scotland's changing climate may affect air quality and the related health impacts. The [Cleaner Air for Scotland Strategy](#) (CAFS 2) was published in July 2021 and implementation of the actions set out in CAFS 2 has subsequently commenced. The [first annual report](#) of progress with implementing Cleaner Air for Scotland 2 was published in June 2022. The second annual report will be published in summer 2023.

Preparing for a warmer climate: Water Refills in Public Places, Top Up Taps – Increasing the availability of tap water can help support Scotland's population adapt to the changing climate by providing a free, accessible way to stay hydrated, particularly important during hot weather. Scottish Water has now installed 80 refill points across Scotland. The growing network has already saved the equivalent of more than 450,000 single use plastic bottles since the first tap went live outside Holyrood on 27 September 2018. By reducing the amount of plastic we use and throw away, we can help to reduce the pressure on marine ecosystems.

How the Adaptation Scotland Programme is supporting progress towards this outcome:

Adaptation Scotland is working with Public Health Scotland and the Improvement Service to develop a briefing on health inequalities, climate justice and climate adaptation. This will provide principles for addressing health inequalities as an integral part of adaptation planning and decision making.

Climate Hazards in the Workplace resources, developed in partnership with the Trade Union movement, have highlighted ways in which frontline workers are being impacted by climate change. Practical tools and resources are provided to support a just transition by helping workers assess climate risks and identify actions to increase resilience.

6. Progress on SCCAP2 'Economy' outcome

SCCAP2 Outcome 3: Our inclusive and sustainable **economy** is flexible, adaptable and responsive to the changing climate

This outcome has three sub-outcomes. The first two sub-outcomes reflect the different challenges faced by Scotland's natural resource based businesses and the manufacturing, services, and other businesses. The final sub-outcome relates to the ability of businesses to harness the opportunities created as a result of climate change.

Examples of progress on policies in support of sub-outcome that "Scotland's businesses based on natural resources are informed and adaptable to climate change"

Farming For a Better Climate – The [Farming for a Better Climate](#) initiative continues to promote practical and cost effective climate change mitigation and adaptation measures to farmers and land managers, alongside findings from the Farming for a Better Climate Soil Regenerative Agriculture Group. The initiative's webpage hosts the webpages Integrating Tree Network and the Agriculture, Biodiversity and Climate Change Network. The farmer-led soil regenerative agriculture network continues to focus on positive actions that can be taken on Scottish farms to support, enhance and protect their soils, such as approaches to allow them to improve production whilst delivering wider benefits such as building soil resilience, improving water retention, storing carbon and enhancing biodiversity.

The Agriculture, Biodiversity and Climate Change Network – Launched in June 2022, the Agriculture, Biodiversity and Climate Change (ABCC) Network is a space for any and all farmers and crofters to share the work they are already doing on farm to support the climate and environment and hear about what others are doing now and for the future. It aims to showcase the vast knowledge and experience within the agriculture community in one place so that farmers and crofters can learn from one another's experiences. As a joint government and industry initiative, the network is a place to highlight the diversity of options and opportunities available to farmers and crofters to adapt to climate change and improve biodiversity.

National Test Programme – The first track of the National Test Programme '[Preparing for Sustainable Farming](#)' began in April 2022 with funding for conducting Carbon Audits and Soil Sampling. This was followed in December 2022 with the launch of [MyHerdStats](#) and in February 2023 with support for Animal Health and Welfare activity. It is designed to help farmers and crofters future proof their farms, to create environmental and economically resilient businesses and to start to prepare now for future conditionality.

The Farm Advisory Service (FAS) – FAS has continued to offer easy access, up to date and relevant climate change adaptation knowledge and information to all farmers and crofters through a network of advisory centres, online resources and a telephone advice facility. Since 2016, the programme delivered produced 1,374 publications, 664 videos, 277 podcasts and 40 online tools, as well as 1,374 events and across the board we would conservatively estimate that more than 50% of this

activity will be around climate change adaptation and mitigation support. Event attendees highlighted an improved knowledge of climate change, improved soil/nutrient management, and improved knowledge of environmental issues and opportunities.

Integrating Trees Network (ITN) – This jointly facilitated project between Scottish Forestry and the Scottish Government, is a farmer-led demonstrator network of farms, crofts and estates, hosting events and promoting the benefits to landowners of new woodland creation. Planting trees can help land-based businesses to adapt by providing shelter for livestock, habitat for wildlife, diversification opportunities for future income, and a contribution to reducing flood risk. Twenty four free events have been held since March 2021. These have been a mix of online and on-farm events, developed based on feedback from farmers and crofters to meet their needs. The ITN also links to useful [resources for farmers interested in planting trees](#). Three host videos have been produced as well as a case study of one of the host farms. A new programme of work for 2023, building on the successes of the ITN so far, is in development.

Examples of progress on policies in support of sub-outcome that "Scotland's economy is innovative and harnesses the opportunities created as a result of climate change"

Infrastructure Investment Plan – The [Infrastructure Investment Plan](#) 2021-2022 to 2025-2026 outlines a coherent, and strategic approach to delivering sustainable infrastructure investment in Scotland. The plan focuses on three core strategic themes for guiding investment decisions in Scotland: Enabling the transition to net zero emissions and environmental sustainability; Driving inclusive economic growth; and Building resilient and sustainable places. Key climate resilience investments featured in the 2023/24 budget include £50 million of total investment towards Climate Action and Just Transition Fund, £20.4 million to support Peatlands development, and funding to improve the resilience of trunk roads to the effects of climate change and severe weather events.

Forestry Strategy: Improving Efficiency and Productivity – Scottish Forestry are supporting the promotion of timber in construction, particularly through modern methods of off-site construction, supported by the work of BE-ST, Scotland's Construction innovation centre. Scottish Forestry has continued to support research and development through universities to encourage the structural use of Scottish timber and is also supporting a PhD at Edinburgh University looking at the use of domestic wood for wood fibre insulation evaluate the potential for producing wood fibre insulation from Scottish forests. Scottish Forestry has also commissioned work on the cascading of timber through the supply chain to ensure we maximise the value and environmental benefits of growing trees and using timber.

Attracting new and more diverse talent to the forestry sector and improving the capacity capabilities and safety of the existing workforce – Scottish Forestry have created, in partnership with the private sector, the opportunity for pre-apprentices to enter the forestry sector via a practical work-based route; the pilot starts this year targeting young school leavers in the northeast initially. We have been heavily involved in the review of land based apprenticeships, ensuring that

there is a forestry option in the renewed work based learning model. We are involved with industry bodies through the Industry Leadership Group and liaise with tertiary learning providers to ensure that there is suitable provision of training for forestry. We have gathered and summarised demand data to support the case for a graduate/technical apprentice to raise the numbers of professional foresters entering the industry. We are leading a forestry STEM Ambassador project within Scottish Forestry to raise awareness of the career opportunities within the forestry sector.

Forestry and Land Scotland – Forestry and Land Scotland (FLS) manages forests and land owned by Scottish Ministers. After previous adoption of an Adaptation Action Plan and launch of FLS's [Climate Change Plan](#) our planners are now planning for future climate threats and this is being adopted in the work of our delivery staff and in our building programmes accordingly. To support the Adaptation Action Plan, adaptation workshops were held for 100+ forest planners/staff to support on designing and growing resilient forests. FLS are developing research in a comprehensive project to understand how, over the next 100 years, our overall approach to managing the national forests and land will affect economic, environmental and social benefits far into the future and how climate change will play a part in this. Over the next year FLS will be undertaking an organisational Climate Change Risk Assessment which will help understand, map current and future climate related hazards, risks and vulnerabilities. This will help strengthen FLS's adaptation plan and localised adaptation actions.

FLS are also:

- developing a research project for tree stability vulnerability, exploring the differences of climate in 2020 and 2050;
- working with the timber processing sector to consider suitable tree species for the next rotation;
- overhauling the tree health governance to better connect with climate change threats;
- integrating adaptation funding into the 5-year business planning exercise;
- revising our approach to private and public water supplies;
- initiating a multi partner project to consider the risk of Sitka Spruce to bark beetles in the future climate; and
- increasing species diversity in our replanting of felled areas to help build resilience.

Hydro Nation: Scholars Programme – The Hydro Nation Scholars Programme continues to support post-graduate research into key topics of interest in the water sector including increasing catchment resilience to climate change and nature-based strategies to attenuate surplus water and floods.

How the Adaptation Scotland Programme is supporting progress towards this outcome:

Adaptation Scotland published adaptation climate finance guidance and case studies in summer 2022. These provide guidance and practical examples of options for developing and accessing climate adaptation finance. An additional urban focused case study is currently being developed in partnership with Scottish Water and City

of Edinburgh Council and work is under way to scope next steps with influencing and developing adaptation funding and finance in Scotland.

Adaptation Scotland is working with [Highland Adapts](#) partners to develop an economic assessment of climate risks and opportunities for the Highland region. This assessment will feed into the regional risk assessment and will contribute to building the business case for adaptation actions.

7. Progress on SCCAP2 ‘Supporting Systems’ outcome

SCCAP2 Outcome 4: Our **society’s supporting systems** are resilient to climate change

This outcome has two sub-outcome considering devolved and reserved infrastructure and the interdependencies between these infrastructure systems.

Examples of progress on cross-cutting policies in support of this outcome

Climate change considerations in civil contingencies risk – Climate change considerations continue to be factored into civil contingencies risk assessment. This is done by civil contingencies risk authors (Scottish Government policy teams and National Agencies such as SEPA and the UK Met Office) considering the broad context that impacts our safety, security and essential services, and assessing civil contingencies risk likelihood and impact based on that broad context. The civil contingencies risk assessment is used by Scottish responders to assist development of effective civil emergency plans and procedures, and provide a basis for risk communication to the general public. The current SRA includes six risk assessments themed around major impacts from climate change, as well as a dedicated climate change overview chapter.

Examples of progress on policies in support of sub-outcome that: "Scotland's devolved supporting systems are resilient to climate change"

The National Transport Strategy 2 – The NTS2 was published 5 February 2020 and sets out our vision for Scotland’s transport system over the next 20 years: ‘a sustainable, inclusive, safe, and accessible transport system helping deliver a healthier, fairer, and more prosperous Scotland for communities, businesses, and visitors’. This vision is underpinned by four priorities: to reduce inequalities, to take climate action, to help deliver inclusive economic growth and to improve health and wellbeing. The NTS sets the context for transport for the Climate Change Plan and for Scottish Ministers future transport investment priorities over the next 20 years including the NTS outcome: “*Will adapt to the effects of climate change*”.

Our second annual NTS Delivery Plan was published in 2022, outlining the actions the Scottish Government is taking to deliver its four priorities. The third Delivery Plan will be published later in 2023. Throughout 2022, we continued to develop Transport Scotland’s Approach to Climate Change Adaptation & Resilience (ACCAR) which will primarily focus on infrastructure and services directly under TS control, it will also provide recommendations on areas where TS can influence decision making. Publication of the ACCAR is due in 2023.

Transport Scotland Vulnerable Locations Groups – In 2022-2023, our Vulnerable Locations Groups have continued to delivery strategic direction for adaptation within our Roads Directorate and delivery of schemes through a Pilot Adaptation Programme to ensure the Trunk Road Network is well adapted to climate change. Schemes delivered through this programme seek to go ‘beyond maintenance’ and adapt the network to the current and future impacts of climate change and aim to deliver a safe, reliable, and resilient Trunk Road Network.

Landslide mitigation resilience measures on the Trunk Road – Transport Scotland has issued a final report in 2022 on review of recommendations from the Implementation Report in the light of the landslide events at A83 Rest and Be Thankful during August and October 2020 and the continued instability at this location. This report briefly outlines the known at-risk sites on the Scottish Trunk Road Network (TRN), the actions that have been taken and to propose and prioritise a first tranche of sites for further investigation of the associated hazards and risks. Seven sites are provisionally identified for action over the next three years and a number of other sites will be the subject of consultation with the north-west Operating Company, Forest and Land Scotland, and Network Rail during 2022-2023.

Tree planting on the slope above A83 Rest and Be Thankful to stabilise the soils is progressing with fencing operations completed in 2021 and Forestry and Land Services successfully completed a planting trial in December 2021. The main planting operation and monitoring is programmed started in 2022 to be continued throughout 2023. A further three rock slopes are scheduled to be designed and remediated in 2023. Programmed landslide research has continued. Follow-up research on Managing Hazardous Slopes is in progress and research on Boulder Hazards started in 2021 to be completed in 2023. Liaison with Forestry and Land Services' steep ground operations has continued, with specific focus on the planned felling programme along the A82 at Loch Ness.

Programmed Landslide Research – Transport Scotland commissioned three research reports this year as part of the ongoing rock slope remediation programme, two of which have been published: "[Managing Hazardous Slopes: High Resolution Panoramic Imagery for Monitoring Purposes](#)"; and "[Managing Hazardous Slopes: Innovative Monitoring Strategies for Managing Hazardous Slopes](#)". This research contributes to our understanding of how to manage the increasing number of hazardous slopes in light of increased rainfall and extreme weather events.

Tools for managing wider risks to the transport network – The Transport Scotland Manual for the Management of the Risk of Unplanned Network Disruption has been updated to include the requirements of the NMC. Manual ownership now resides with Roads – Operations and the 2021 revision includes increased Flooding, Landslide and Wind Management Plan requirements. The Manual provides direction to Operating Companies on managing and mitigating the effects of disruptive events, such as those caused by the predicted increase in extreme weather events such as high winds, flooding, snow, and ice.

The four Operating Companies continue to develop and implement disruption risk processes which are informed by the formal recording of all previous events, as they occur. The on-going recording of events and subsequent revisions to the plans provides a platform for early detection of changing conditions that may have an impact on the network. Furthermore, the manual includes a Disruption Risk Assessment Tool, which provides a robust and objective framework within which to analyse patterns of events, and their locations, in order to support decision-making and identify particularly vulnerable locations and assets. This should be used to drive investment to address disruption events that already occur and also those which might emerge or increase in frequency and severity in the future.

Landscape management around trunk roads – As part of the delivery of the combined measures for landslide mitigation resilience on the A83, Transport Scotland is working in partnership with Forestry and Land Scotland (FLS) to establishment a native broadleaved woodland on the steep slopes of Beinn Luibhean, directly above the road. The project is now into Phase 2 of the 2-stage planting programme which aims to be complete by early 2024. The works have included the innovative use of drone technology to seed the more inaccessible parts of the slope. A comprehensive monitoring strategy for the project is being managed in partnership with Forest Research, encompassing a range of technological and scientific approaches to assess soil/ground movement and saturation, and to monitor the establishment and impact of the woodland. It is anticipated this impact will extend beyond the potential stabilisation of the slope and regulation of surface water flow and include enhanced habitat connectivity through the glen and down to Ardgarten and Loch Long and increase opportunities for a net gain in local biodiversity.

Further to the works on the A83, Transport Scotland has embarked on the first stages of introducing new areas of native woodland planting on areas of surplus land associated with the trunk road network – this can include non-operational land or areas that were acquired during the road construction process. The intention is to make best use of these areas by developing parcels of broadleaved trees using native species that will help sequester carbon whilst also increasing local biodiversity and improving habitat connectivity, both within the trunk road boundary and to adjacent habitats.

Transport Scotland recognises that a natural capital approach is key to understanding our dependence on natural resources - for provisioning, regulating, supporting, and cultural services. The agency is currently developing and testing a model for establishing a natural capital baseline assessment of the trunk road network, with a corresponding set of accounts capable of regular updating, with the opportunity of being mainstreamed in future decision making. The baseline will incorporate a biodiversity assessment to provide an integrated framework for delivering positive outcomes for biodiversity across all the agency's operations, leading to opportunities for biodiversity net gain, in line with the emerging Scottish Government approach.

There is also a recognition that climate change is having a profound impact on native species including the related spread of invasive non-native species (INNS) and the increasing occurrences and severity of pathogens and diseases. Transport Scotland is actively managing the impact of tree disease through concerted liaison with bodies such as the Tree Council and Scottish Forestry. The operating companies responsible for the management and maintenance of the Trunk Road Network have undertaken ash surveys throughout 2020-2021 to establish a database of the ash resource and the spread/impact of the disease. The trees have been categorised according to the level of risk they present to infrastructure and the public, and a programme of works focusing on the highest risk trees/areas is underway. A phased felling programme based on a risk assessment approach is being delivered and is ongoing, together with the rollout of a recovery phase to implement tree planting of appropriate species to replace the lost resource.

Preparing the Scottish road network for severe weather events – The Met Office has completed an analytical study, which had been commissioned by Transport Scotland, *Assessing the wind hazard along the Scottish road network*. This bespoke assessment informed the revision of the Transport Scotland *High Wind Strategy and National Wind Management Guidelines* which, like the current version, will be made available to all roads authorities as the scope of work extended to the complete A-class road network, over and above all Trunk Roads and motorways. The Wind Management Variable Message Signs (VMS) Project, which is a key component in the strategy to manage the impacts of high winds, has progressed with the installation of a new weather station on the Tyne Bridge on the A1 now linked to VMS. Additional VMS have been installed on the approaches to Friarton and Erskine Bridges to support wind management with further sites in development.

ScotRail Climate Change Adaptation Plan – Network Rail published its updated [Weather Resilience and Climate Change Adaptation Plan](#) for CP6 (2019-2024) in 2020. This forms one element of Network Rail's Sustainable Rail Strategy which is being delivered by Network Rail with governance oversight from Transport Scotland. Both organisations continue to work closely, with cross-working that includes sharing best practice between rail and Transport Scotland's environment teams more focussed on the roads network. ScotRail has also published on its website a high level [Climate Change Adaptation Strategy](#). Reflecting the Team Scotland approach in working collaboratively with Network Rail and Transport Scotland to ensure resilience of the network and identify adaptation interventions. Transport Scotland has provided policy direction for ScotRail Trains Ltd to continue and build upon this work through an environmental sustainability strategy when it came into public ownership in April 2022.

Private Water Supplies – The recast EU Drinking Water Directive came into force on 12 January 2021 which introduces a number of new requirements including obligations on access to water. The Scottish Government has already aligned with parts of this legislation through The Public Water Supplies (Scotland)(Amendment) Regulations 2022 and intends to align with the remainder. Policy work continues to assess how Scotland should align with the remaining parts of the Directive to best protect public health.

Drought is affecting Scotland with East Scotland experiencing the driest January on record since 1940 in 2022. However, drought has affected many parts of Scotland in recent years with increasing numbers of Private Water Supplies (those owned/operated by their users) running dry. In response, the Scottish Government has supported affected households with an emergency scheme to provide bottled water highlighting the need for more resilient drinking water supplies. The government is leading a pilot project with the assistance of Scottish Water, Aberdeenshire Council and Consumer Scotland, to understand what opportunities are available to extend the public water networks to connect with households reliant on private supplies. £20 million will be invested to support this programme.

Examples of progress on policies in support of sub-outcome that "Scotland's reserved supporting systems are resilient to climate change

Reporting on adaptation and climate preparedness in the reserved

infrastructure sector – The UK Climate Change Act’s Adaptation Reporting Power (ARP) gives the UK government the discretionary power to require relevant bodies to report on their climate preparedness. Following the [third round of ARP reporting](#) in 2021, the UK Government consulted on a [fourth round of ARP reporting](#) between February-April 2023.

Reaching 100% Programme – The **Reaching 100% (R100)** programme continues to deliver critical infrastructure across Scotland. The £600 million R100 contracts have delivered over 16,600 connections, the vast majority of which are gigabit-capable, far exceeding our superfast commitment. The contracts will continue to deliver full fibre connectivity in the years ahead thanks, in part, to further investment by both the Scottish and UK Governments that will extend the reach of the contracts to a further 2,600 rural properties. During 2022, sixteen (16) new fibre subsea cables were laid which will provide future-proofed, resilient connectivity to 15 Scottish islands for decades to come.

Scottish 4G Infill Programme – The Scottish Government’s £28.75 million Scottish 4G Infill programme (S4GI) is improving Scotland’s mobile connectivity by delivering future-proofed mobile infrastructure and services to 55 so-called ‘notspots’ (areas where no mobile coverage is available from any mobile network operator) in rural and island communities, from the Scottish Borders to Shetland and Orkney. As of February 2023, 32 sites are now live and delivering 4G services, with a pipeline of further site activations to follow through to the programme’s completion in spring 2023.

How the Adaptation Scotland Programme is supporting this outcome:

Major infrastructure operators, owners and agencies including Transport Scotland, Scottish Water and local authorities are continuing to work with Adaptation Scotland to use the Adaptation Capability Framework and mature their approaches to climate change adaptation. Transport Scotland has used Framework to inform the development of their adaptation plan and will use the benchmarking tool to evaluate progress.

8. Progress on SCCAP2 ‘Natural Environment’ outcome

SCCAP2 Outcome 5: Our **natural environment** is valued, enjoyed, protected and enhanced and has increased resilience to climate change.

This outcome has two sub-outcomes. These sub-outcome split across the adaptability of terrestrial natural systems’ themselves and the social and cultural benefits that societies obtain from ecosystems. The products and economic value obtained from ecosystems (provisioning services) are considered under outcome 3.

Examples of progress on cross-cutting policies in support of this outcome

Environment Strategy – The Scottish Government’s Environment Strategy vision and outcomes, published in 2020, describe our long-term ambitions for restoring Scotland’s natural environment and playing our part in tackling the global climate and nature crises. The Environment Strategy’s second progress report to Parliament is due to be published in March 2023.

Scottish Biodiversity Strategy – Biodiversity is the best chance we have to adapt to climate change and ensure we can continue to enjoy nature’s benefits, on which we all depend. The new [Scottish Biodiversity Strategy](#) published in December 2022 sets out our vision to 2045 and the long term outcomes needed in Scotland to address the ongoing decline in biodiversity including ensuring on land, on coasts and in our seas, our natural environment, our habitats, ecosystems and species, are resilient and adapting to climate change. The strategy outlines 26 priority actions needed to achieve the vision of halting biodiversity loss by 2030 and reversing the trend by 2045.

Deer management – A multi-agency Strategic Deer Board was established to progress agreement on priorities for the next few years to deliver on biodiversity and climate change targets, informed by the Independent Deer Working Group Report. This provides the opportunity to reframe the public interest associated with deer management, and to increase momentum towards sustainability. The coordinated programme of deer work being progressed includes legislative change, striking a balance between regulatory and incentive approaches, and effective monitoring of operational delivery on the ground. The development of regionally prioritised action plans will allow focus on the greatest opportunities, including resilience of nature and contributions of nature to wider adaptation.

Embedding nature-based adaptation in farming – We helped develop enhanced conditionality measures recently published by Scottish Government to demonstrate what is being considered and evaluated as part of future agriculture support. Relevant measures include enhancing soil health and improved diversity of agricultural habitats. We are also developing a Biodiversity Audit (under Preparing for Sustainable Farm - National Test Programme) to enable farmers and crofters to map and assess the condition of farm habitats, with accurate baseline data being essential to enable effective management on farm for climate and nature. Additionally, our Piloting an Outcomes Based Approach in Scotland (POBAS) project, promoting greater diversification of farm habitats to support adaptation of nature, was further expanded, including development of an app.

Examples of progress on policies in support of sub-outcome that: "Scotland's biodiversity, ecosystems and landscapes are adaptable to the changing climate"

Nature Restoration Fund 2021-2026 – The £65 million fund [Nature Restoration Fund](#) (NRF) funded more than 60 projects focused on restoration of land and sea in the year 2021-2022. Two separate NRF strands were established: one funding projects <£250k to be delivered over a maximum of 2 years (Helping Nature); and one funding and developing projects >£250k delivered over multiple years (Transforming Nature). In 2022, the Helping Nature strand of the Fund supported 44 projects. This included projects specifically on climate resilience (Inner Forth Climate Resilience) to help species adapt to climate variability and the creation of wetlands such as the project at Balgavies Loch, helping to retain sediment coming from run off in the wider agricultural catchment.

Building evidence around Protected Areas – During 2022, NatureScot progressed work to develop a holistic ecosystem health based approach to protected areas monitoring. This is tied into our current work to develop the Nature Networks and 30x30 frameworks. By focussing on monitoring the most impactful pressures and threats to nature, and applying the approach across more of Scotland's land, Nature will become more resilient to the impacts of nature. This complex realignment of our monitoring approach will progress over the next two years and will be underpinned by our current protected areas monitoring programme through the transition phase.

National Nature Reserves (NNRs) – During 2022 work continued to enhance NNRs as crucial nodes for the resilience of nature and of its many benefits, notably through restoration of peatland, upland habitats, woodland expansion and management of Invasive Non-Native Species to enhance habitats. NatureScot also implemented measures that enhance the contribution of NNRs to climate adaptation and emissions-reduction in combination. This has included the provision of charging points to reduce emissions by visitors and encourage use of electric vehicles. Investment in infrastructure is also helping reduce erosion and habitat damage in sensitive upland and coastal areas.

Biological Diversity Monitoring – NatureScot and Scottish Government colleagues were part of the UK team at COP15 (UN Convention on Biological Diversity). NatureScot specialists also helped draft the target for genetic diversity (safeguarding genetic diversity is essential for biodiversity to be resilient in the face of climate change). Species data shows a continuation of the trend for sun-loving butterflies to colonise Scotland. A new breakdown of breeding birds' data has allowed us to look in more detail into the links with schemes, such as farm woodland creation and other management schemes. Breeding birds are increasing in farm woodland sites, suggesting that carbon sequestration and biodiversity can both benefit from appropriate management.

Pollinator Strategy for Scotland 2017-2027 – There was activity across all 5 Objectives of the Strategy, notably on the following:

- The work of the Scottish Wildlife Trust-led Irvine to Girvan Nectar Network saw more habitat managed and created specifically for the benefit of Pollinators.
- Stirling Council completed a public consultation and are now delivering a Pollinator Action Plan which complements the ambitions of Scotland's Pollinator Strategy.
- NatureScot's annual pollinator conference drew together Community Groups to share examples of good practice in creating pollinator-friendly habitat whilst raising awareness of the importance of pollinators.

Peatland restoration – In 2020, ambitious plans were announced to invest more than £250 million over ten years to restore at least 250,000 hectares of degraded peatlands by 2030. NatureScot's investment in restoration in 2022-2023 is on track to deliver our target of putting 4,700 hectares of degraded peatland on the road to recovery. The multiple benefits – including in terms of resilience to further climate change - are monitored and promoted thanks to the roll-out of a Monitoring Strategy and Monitoring Network. Our provision of technical advice and capacity building made use of our new Technical Compendium, and a new Skills Plan which has seen training delivered to 405 people so far in 2022-2023.

Expanding the Area of Forests and Woodlands – Scotland is leading the way with new woodland creation, establishing around 76% of all new woodland created across the UK last year by April 2022. Scotland planted over 10,480 hectares whilst the rest of the UK planted 3,360 hectares. The Forestry Grant Scheme funds a range of forestry activities, including woodland creation and native woodland management, and has £51.7 million of commitments for projects to be delivered in 2022/23 (of which £45.2 million is for woodland creation). All these projects are due to be completed by applicants and claimed by 31 March 2023. The creation of new woodland in Scotland is making a critical contribution to responding to a green recovery and the global climate emergency.

Enhancing environmental benefits of forestry – Scottish Forestry worked with Forest Research alongside other devolved agencies to publish the UK Forestry Standard Practice Guide: Designing and managing forests and woodlands to reduce flood risk in October 2022. The guidance provides practical advice to landowners, managers and authorities involved in flood risk management on how best to manage and design forests to reduce flooding. Additionally, work is ongoing by Forest Research on finalising a UK Forestry Standard Practice Guide: Creating and managing riparian woodlands with input from Scottish Forestry and all devolved agencies. The guidance will assist in the planning and design of riparian woodlands and management approaches to improve habitat and protect water resources.

Scottish Forestry are working to deliver the Programme for Government commitment to improve support for tree planting around rivers and streams in areas which take account of multiple benefits by April 2023. Target areas for riparian woodland planting are being identified based on where there is the greatest multiple benefit gain and will ensure grant support is focused in these priority areas. In January 2023, Forest Research published a study, commissioned by Scottish Forestry, which estimates the capacity of woodlands to store and slow runoff is worth almost £100 million per year to Scotland.

Scotland's Rainforests – Scottish Government is committed to restoration of the rainforest. Scottish Forestry is currently recruiting for a Rainforest Action Co-Ordinator to help to co-ordinate this important work. The post will work closely with the Alliance for Scotland's Rainforest, Forestry Land Scotland, NatureScot, and other key partners to develop a strategic approach to restoration of the rainforest. They will also help to co-ordinate investment opportunities and delivery plans across engaged parties.

Following the recent spending review Forestry and Land Scotland have been awarded £1.3 million from Scottish Government to support the conservation of Scotland's rainforests. FLS manages over 14,500 hectares, or about third of the estimated Scotland's rainforest in the rainforest zone, but, like much other rainforest in Scotland, it is threatened by deer browsing and invasive rhododendron. This funding will enable FLS to undertake an increase in rhododendron management, PAWS restoration and deer management on Scotland's National Forests and Land, and work with neighbours and partners to achieve landscape-scale restoration.

Scottish Forestry are in discussions with a range of organisations and public sector bodies to determine how we could scale up support in the longer term, including on the scope to further attract responsible private investment.

Adaptability and Resilience of Forests and Woodlands – The UKFS Practice Guide - Adapting forest and woodland management to the changing climate was published in 2022. The Practice Guide provides advice to forest and woodland owners, managers, planners and policymakers on how to adapt management and plan for the changing climate by providing an adaptation framework that takes the reader through the process of choosing and implementing appropriate adaptation measures. It brings together the latest insights from research and practice, supplemented by case studies to show how adaptation measures are being applied. This Guide supports the UK Forestry Standard and its Guidelines on Climate Change, which are the primary source of information on good practice requirements.

Scottish Forestry shared a framing and discussion paper on Building Resilient Future Forests with the National Forestry Stakeholder meeting 10 November 2022. The feedback will be used to develop a Resilience Implementation Plan which will identify policy priorities to increase the use of adaptation and resilience measures in the forest industry in Scotland.

Scottish Forestry also worked with Forest Research and the devolved administrations to deliver the [Climate Change Hub](#) which brings together information and practical guidance about protecting our UK woodlands and forests from the impacts and risks due to the changing climate through adaptive practice. The hub was launched in January 2023 and summarises the science and provides straightforward, practical support for landowners, woodland managers and forestry practitioners.

Ensuring Sustainable Management of Forests and Woodlands – The four administrations of the UK are undertaking a review of the current UK Forestry Standard (UKFS) which defines the agreed approach to sustainable forest

management across the UK. The UKFS includes good forestry practice requirements and specifically addresses soils, water, biodiversity, landscape and natural heritage, people, and climate change. Engaging stakeholders is an important aim of the review and there has been a two-stage stakeholder consultation process. The first consultation which closed in August 2021 was based on a range of cross-cutting themes. The second consultation which closed in December 2022 was on the draft content of the next edition of the UKFS. The draft that went to consultation had been informed by both the specialists' assessment and responses to the first consultation. The responses to both consultations have helped ensure that the Standard is balanced, relevant and applicable across the UK. Final publication of the UKFS is due by the summer of 2023.

River Basin Management Plans – The River Basin Management Plans (RBMPs) set out how Scottish Government, SEPA, other responsible authorities and partners work together to protect and improve the water environment in Scotland. The plans aim to prevent deterioration and improve the quality of the water environment to at least good condition. On behalf of the Scottish Government, SEPA published the [RBMPs for 2021 to 2027](#) in December 2021. The plans are structured around how RBMPs can help deliver Scotland's environment strategy, contributing to a net-zero circular economy. It has a focus on tackling overuse of natural resources, the climate emergency and biodiversity crisis. The plan takes a whole systems approach to dealing with these issues focussed on the themes of: healthier and more resilient communities; water supply and wastewater infrastructure; sustainable and resilient rural land-use; and removing man-made barriers to fish migration.

Wild Salmon Strategy – The Wild Salmon Strategy, published by the Scottish Government in January 2022 includes an action to 'improve climate resilience of rivers, for example through supporting targeted riparian tree planting and natural regeneration and peatland restoration'. The accompanying Implementation Plan was published in February 2023 details the actions required to deliver this. The Scottish Government is working in partnership with Scottish Forestry to develop and implement an integrated approach to riverbank management. This includes enhancements to the Forestry Grant Scheme with the aim of improved support for tree planting around rivers and streams.

Examples of progress on policies in support of sub-outcome that "Scotland's natural environment and its contribution to wider societal adaptation is enjoyed, valued and maintained"

Outdoor Learning in Nature – The [Learning in Local Greenspace](#) project (2015-2021) exceeded its target of 100 green spaces being regularly used for outdoor learning and play, improving the greenspaces where necessary to allow this to happen. It engaged 115 schools from 12 local authorities, providing project resources, advice and staff training on outdoor learning. The project amounted to a long-term investment in community adaptation. Evidence showed that it raised awareness of the physical and mental health benefits of time spent in nature, and increased the capacity of the adults of the future to access those benefits.

The Nature Discovery Map Scotland pilot involves young people in learning about and enhancing nature in and around their school grounds. This is part of the UK

initiative for an 'Education Nature Park' which aims to sustain and enhance biodiversity across the educational establishment estate. An interactive digital mapping toolkit is being co-designed and tested with a small number of schools, to inform a potential national roll-out in 2023. This investment in community adaptation will increase understanding of biodiversity in the adults of the future, and more directly will support biodiversity recording and enhancements to habitats.

Our National Health Service (ONHS) Programme – The [ONHS programme](#), led by NatureScot, supports the up-scaling of nature-based solutions to contribute to public health outcomes around physical inactivity, mental ill-health and health inequalities. The work of four Green Health Partnerships (GHPs) in Dundee, North Ayrshire, Highland and Lanarkshire continues to achieve co-benefits for climate change adaptation by championing biodiversity and high quality multi-function green space, and boosting climate-nature literacy to promote community resilience. In 2022, the GHPs delivered co-ordinated promotion of the benefits of activities such as walking and cycling during Green Health Week, and worked with delivery partners including active travel hubs to help people overcome barriers to changing how they get around.

The fourth Partnership in Lanarkshire has now been mainstreamed by NHS Lanarkshire, in accordance with the NHS Scotland Climate Emergency and Sustainability Strategy (published Aug 2022), which includes an action for all Health Boards to establish Green Health Partnerships. The remaining three GHPs within the ONHS programme have been funded for a further two years to enable completion of an impact evaluation. A webinar held in early 2023 shared the initial findings of the GHP evaluation along with other green social prescribing examples across Scotland in preparation for supporting the roll out of Green Health Partnership approaches across NHS Boards.

Public engagement in Woodland Creation and Forest Management – Forest owners and managers are encouraged to consult local communities and interested parties on the development of woodland creation proposals and forest management plans. The 2022-2023 programme for government commits the Scottish Government to enhance the Forestry Grant Scheme to deliver better community engagement and is working to deliver improvements in 2023. Scottish Forestry launched the '[Scottish Junior Forester Award](#)' last year and the Outdoor and Woodland Learning (OWL) Scotland provided support to five local OWL Groups to provide teachers with training on how to deliver this award with pupils into the future.

Walking and Cycling Networks – Helping our natural environment adapt can support our health and wellbeing and enjoyment of the outdoors. Transport Scotland continued to fund development of the NCN in 2022-2023 to further develop routes on the 30-year Strategic Network Plan for Scotland including pipeline delivery projects. Funding for NCN has increased to £10.6 million in 2022-2023 to support this development. £35 million per annum capital funding goes direct to local authorities through the Cycling Walking and Safer Routes (CWSR) grant in 2022-2023.

Over £50 million of this year's active travel budget is being invested through the Sustrans Places for Everyone programme to enable local authorities and others to deliver active travel infrastructure projects. The Scottish Government budget for

2023-2024 has confirmed record funding for Active Travel of £189.2 million. TS has published revised guidance for local authorities to support them in developing active travel strategies that will identify and prioritise schemes to build local walking and cycling networks. TS is preparing a new Cycling Framework to replace the Cycling Action Plan for Scotland and will publish this in early Summer 2023. The Cycling Framework for Active Travel sets out our strategic priorities and shared actions to maximise cycling's contribution in realising the Scottish Government's long term [Vision for Active Travel in Scotland](#).

How the Adaptation Scotland Programme is supporting this outcome:

Adaptation Scotland is currently leading work to identify connections between land use, management and ownership and climate adaptation. Learning from this work will support integration of adaptation into local planning, investment, community wealth building, and placemaking decisions.

9. Progress on SCCAP2 ‘Coastal and Marine Environment’ outcome

SCCAP2 Outcome 6: Our **coastal and marine environment** is valued, enjoyed, protected and enhanced and has increased resilience to climate change

This outcome has two sub-outcomes. These sub-outcome split across the adaptability of coastal and marine natural systems’ themselves and the social and cultural benefits that societies obtain from ecosystems. The products and economic value obtained from ecosystems (provisioning services) are considered under outcome 3.

Examples of progress on cross-cutting policies in support of this outcome

Scotland’s National Marine Plan – In Programme for Government 2022-2023, Scottish Ministers announced their intention to start the process of developing a new National Marine Plan (NMP), to “address the global climate and nature crises by carefully managing increased competition for space and resources in the marine environment”. There are clear synergies between the six outcomes of Scotland’s Blue Economy Vision and the existing NMP objectives, making it a key delivery mechanism for Scotland’s Blue Economy. The programme of work to develop a “National Marine Plan 2” (NMP2) will integrate these outcomes and seek to address the increasing competition for marine space, whilst supporting progress to tackle the twin crises of climate change and biodiversity loss. To do so, the development of NMP2 is exploring opportunities to strengthen climate change adaptation objectives, and opportunities for a clearer prioritisation and decision-making framework to guide different interests and sustainable use of Scotland’s marine space in the context of Scotland’s net zero ambitions. As part of NMP2, an updated monitoring and evaluation framework will be developed to enable improved tracking of progress against new NMP2 objectives, which will include consideration of achievement of climate change mitigation and adaptation outcomes.

Marine Protection – In 2022, new commitments to help marine ecosystems adapt to climate change continued to progress and a consultation on the Policy Framework and Selection Guidelines for Highly Protected Marine Areas was launched in December 2022. Work started and is continuing to develop consultation materials on management measures for fishing activity in Marine Protected Areas and to collate views on a cap on inshore fishing effort – both consultations are due towards the end of 2023. New protection was given to critically endangered flapper skates through designation of the Red Rocks and Longay MPA in December 2022.

Blue Carbon - The [Scottish Blue Carbon Forum](#) (SBCF) continues to support strengthening the evidence base for marine and coastal blue carbon habitats, including in relation to climate change adaptation. The SBCF is working with the UK Blue Carbon Forum and UK Blue Carbon Evidence Partnership, both of which formed in 2022.

Multilateral action to achieve seas resilient to the impacts of climate change and ocean acidification – The North-East Atlantic Environment Strategy is the key means by which OSPAR’s 16 Contracting Parties will implement the OSPAR

Convention until 2030. Adopted in 2021, it sets out collective objectives to tackle the triple challenge facing the North-East Atlantic ocean: biodiversity loss, pollution, including marine litter, and climate change. We are working with the rest of the UK and the other Contracting Parties on the implementation of this new Strategy to improve the state of the marine environment.

Examples of progress on policies in support of sub-outcome that: “Scotland’s coastal and marine biodiversity, ecosystems and landscapes are adaptable to the changing climate”

Marine Protected Areas (MPA) Network and Monitoring Strategy – The MPA network currently consists of 233 protected areas covering over 37% of our seas, over the 30% by 2030 target defined by the Convention on Biological Diversity’s Kunming-Montreal Global Biodiversity Framework. We are using the Scottish MPA Monitoring Strategy to measure the effectiveness of the MPA network. Fisheries measures, for sites which still require them, are being developed and will be delivered by 2024.

Farmed Fish Health Framework – Monitoring and responding to climate change has been one of the main areas of focus for the Farmed Fish Health Framework (FFHF). Work on development of an ‘early warning system’ for harmful algal blooms has continued. The Sustainable Aquaculture Innovation Centre (SAIC) has received funding to develop a series of training workshops on identification of relevant species. The FFHF will also consider the impact of zooplankton which has had an impact on the health of farmed fish in 2022. The FFHF with SAIC has also carried out some work on dissolved oxygen and published a report in 2022 outlining what monitoring is currently undertaken in Scotland. The FFHF will explore opportunities to expand the scope of this monitoring in 2023.

Examples of progress on policies in support of sub-outcome that: "Scotland's coastal and marine environment and its contribution to wider societal adaptation is enjoyed, valued and maintained”

Coastal Change Adaptation - £1.6 million was allocated to local authorities for coastal change adaptation in 2022-2023. £11.7 million capital has been allocated over 4 years to local authorities to undertake coastal change adaptation and consider how nature based solutions can help coastal communities adapt to climate change. [Coastal Change Adaptation Planning guidance](#) was published in February 2023 on the [Dynamic Coast](#) website.

Scotland's Future Fisheries Management Strategy 2020-2030 - Within the Future Fisheries Management Strategy, we published a [delivery plan](#) on 21 September 2022 to set out how and when we would deliver the range of actions in the Strategy, including the climate change action, with a clear signal on the front-loading of actions which would deliver enhanced environmental benefits and significant improvements to our fisheries management approach. We will develop a firm plan to set out direct actions to address climate change in a fisheries context in partnership with our main co-management group – the Fisheries Management and Conservation Group (FMAC). We have recently undergone a considerable refocussing of FMAC – to place it on a more strategic footing and to ensure that we have a balance of fishing

industry and environmental input. The FMAC group will be supplemented by a number of technical and issue-specific subgroups, including one focussed on climate change. The climate change sub-group membership will not just be limited to FMAC members but will be opened to others with expertise in fisheries and climate change. The subgroup will have balanced representation of fisheries and conservation interests.

Monitoring Climate Change Impacts in Scottish Seas – Marine Scotland’s sustained ocean observing programme has continued to collect evidence of the impacts of climate change and ocean acidification on marine ecosystems. These observational programmes collect data on the changes in physics, chemistry and biology, informing several national and international assessments (UK Marine Strategy, OSPAR). Experts from Marine Scotland have participated in the Oslo-Paris Convention’s Quality Status Report 2023 (due for publication Autumn 2023) where this evidence has contributed to the status assessment of the North-East Atlantic marine ecosystem, including the impacts due to climate change. Data from the Scottish Coastal Observatory have shown changes since 2014 in the seasonality and abundance of some phytoplankton groups at some sites that could have the potential to impact higher trophic levels and ecosystem services. These data have also contributed to the recent DEFRA Expert Panel Review of crab mortalities in the Tees.

Marine Climate Change Impacts Partnership (MCCIP) – The Marine Climate Change Impacts Partnership has continued to work on updating the evidence review papers to ensure the latest information is available to decision makers. Updated scientific reviews, supported by experts from Marine Scotland, have been produced on the topics of Coastal Flooding, Aquaculture, Ocean Acidification, Stratification, Temperature, Storms and Waves, Ocean Circulation, Oxygen and Marine Mammals. Marine Scotland will continue to support this partnership’s work, as it is seen as a key method for providing evidence of climate change impacts in the marine environment to inform decision making.

How the Adaptation Scotland Programme is supporting this outcome:

Adaptation Scotland works to incorporate consideration of marine and coastal change climate risks, impacts and adaptation responses into the work of place - based adaptation projects. This includes supporting engagement on marine and coastal climate impacts and adaptation as part of the support for the Carbon Neutral Islands Project where we are working in partnership with Community Energy Scotland and local partners to incorporate climate adaptation into local plans for six Scottish Islands.

We included coastal adaptation in our adaptation finance case study work and are currently working in partnership with Glasgow University and the City of Edinburgh Council to develop a case study to share learning on how climate adaptation has been incorporated in to the coastal park which is part of the Granton waterfront regeneration.

10. Progress on SCCAP2 'International Networks' outcome

SCCAP2 Outcome 7: Our **international networks** are adaptable to climate change.

This outcome has three sub-outcomes. The first focuses on climate change adaptation and imported food quality and safety, the second on Scotland's role in international adaptation governance and the third focuses on the adaptive capacity of Scotland's international trade.

Updates in this year's annual report focus on the Scottish Government's climate justice work in the year of COP26 in Glasgow.

Examples of progress towards achieving the sub-outcome that "Scotland is active in international governance, helping to manage the potential international instability caused by climate change"

Women's Environment and Development Organisation – For the last five years the Scottish Government has supported WEDO to address gender equality in climate action in the Global South by directly supporting women delegates attend COPs and represent their own respective interests. Funding also assists grassroots and indigenous women leaders to access funding to scale up climate solutions in Global South countries. These locally-led solutions centre human rights and gender equality while achieving sustainable adaptation and mitigation outcomes. Scaling and replicating these activities within local contexts is at the heart of catalysing large-scale transformation.

The WEDO Gender Climate Tracker now includes updates of the women's participation statistics and gender mandates at COP27, with the addition of the latest gender analyses of National Adaptation Plans provided by their collaborator the NAP Global Network. Our support for WEDO led to the creation of a [National Gender and Climate Change Plans](#) webpage and the expansion of the resources featured.

Climate Justice Resilience Fund – Of the £2 million committed by the Scottish Government during COP26, £1 million was awarded to the Climate Justice Resilience Fund to help some of the world's most vulnerable communities prepare for and adapt to climate change, tackle structural inequalities and recover from climate induced loss and damage. As a result, communities in Bangladesh, Malawi and the Pacific are able to re-build livelihoods, for example through skills development opportunities, as well as repair homes and infrastructure damaged by climate change.

Activities included supporting communities to make informed decisions on migration and use remittances to build resilience. For those forcibly displaced, the provision of safe shelter is helping protect and address their rights and needs. In order to address the non-economic societal changes induced by the climate crisis, such as impacts on cultural identity, projects are utilising methods such as storytelling and intergenerational dialogue to preserve traditional [knowledge](#).

Scottish Catholic International Development Fund – During the 56th Bonn Climate Change Conference, the First Minister announced that £500k would be directed to support communities in Malawi facing losses and damages resulting from recent tropical storms. The project has been delivered by local organisations on the ground in partnership with SCIAF; drawing on the lessons and experiences of delivering the previous Scottish Government funded Climate Challenge Programme Malawi (CCPM).

The project adopted a four stage approach: first assessing with communities whether loss and damage has occurred and to whom; second co-designing and implementing interventions to address losses and damages experienced; third measuring the immediate impacts and delivery of implemented interventions and finally determining the longer term impacts of interventions. Interventions include fortifying graveyards, rehabilitation of flood defences, psycho-social first aid and victim support and safe housing construction.

Stockholm Environment Institute (SEI) – The Scottish Government supported [research by SEI](#) to understand how to apply climate justice principles to loss and damage finance, what modalities could distribute finance for sudden onset losses and damages and how to undertake locally-led finance needs assessments.

International Centre for Climate Change and Development (ICCCAD) – Research by ICCCAD aims to generate and share innovative thinking on addressing loss and damage at different institutional levels through case studies in Malawi and Zambia. Evidence gathered through the case studies will assist in identifying opportunities to integrate addressing losses and damages into national policy (e.g. National Adaptation Plans), finance and planning frameworks, thus accurately situating need and specifying required responses in readiness for international funding.

Loss and Damage Convening – The First Minister co-hosted a roundtable on Loss and Damage in February 2022 which brought together a range of interested parties with the aim of identifying commitment and specific areas for progress, opportunities ahead and the alliances required in order to further move Loss and Damage to delivery and action.

In October 2022, the Scottish Government hosted a conference on *Addressing Loss and Damage*; bringing together international representatives and practitioners to articulate best practice. The subsequent report [Practical Action for Addressing Loss and Damage](#), analyses and platforms case studies on existing action to fund and address loss and damage.

COP27: Adaptation Innovation Lab – Following a successful collaborative event at COP26, EIT Climate KIC, RegionsAdapt and Scottish Government organised a hybrid Adaptation Innovation Lab on Adaptation and Agriculture Day in the Multi-Level Action Pavilion at COP27 in Sharm-El-Sheik, Egypt. The Lab brought together representatives from regions across the world including Rt Hon. Mr. Cattaneo, Regional Minister, Environment and Climate Change, Lombardy, Rt Hon. Mrs. Barnadas, Secretary of Environment, Government of Catalonia, Mayor Errick Simmons of Greenville, Co-chair of the Mississippi River Cities and Towns Initiative,

Mr. Adolfo Uriarte, Director of Natural Territory and climate change of the Basque Country and others to explore how regions can drive forward innovation on climate adaptation policy and delivery.

RegionsAdapt and Under2Coalition – Scottish Government remains an active member of the RegionsAdapt network of state and regional governments committed to increasing global ambition for climate resilience. Scotland is also currently European co-chair of the Under2Coalition, an international coalition of 260 climate ambitious state and regional governments from the Global North and South committed to keeping global temperature rises in line with the Paris Agreement. As part of the Under2Coalition Future Fund Secondment, Scottish Government participated in two days of knowledge exchange with the Government of Antioquia in Colombia with Adaptation Scotland and Scottish Government delivering a workshop on our approach to climate change adaptation in Scotland.

Traction Learning Exchange Project – A new framework to help organisations and communities around the world find out what will help and what can act as barriers to adapting to climate change was launched in August 2022. The Traction framework, funded by Scottish Government and developed by Sniffer, International Institute for Environment and Development (IIED), is designed to be universally applicable and has been piloted in very different locations around the world; from Scotland's Outer Hebrides, which are vulnerable to increased frequency of storm events and changes to rainfall and temperature, to Malawi in Southern Africa where climate change threatens to increase both droughts and flooding.

The framework focuses on five key areas to allow communities and organisations to understand what is helping and hindering them from making progress on adapting to climate change in a way that is positive and just across society. They include looking at 1. policies and leadership, 2. governance, 3. having the right evidence and data, 4. collaborating with public, private and third sector groups and 5. taking ethical and justice considerations into account.

Research into link between gender and climate justice – The Scottish Government commissioned [research](#) through ClimateXChange (published September 2022) into looking at steps needed to integrate its approach to international climate justice and an outward-looking feminist foreign policy. The report describes levels of action needed to improve this approach and provides a framework to analyse policy in Scotland and internationally.

How the Adaptation Scotland Programme is supporting this outcome:

Adaptation Scotland supported planning for a Scottish Government, California State Government, Climate-KIC and Regions Adapts Adaptation Lab at COP27. This event built on the successful Adaptation Lab event held at COP26. Adaptation Scotland continues to maintain strong links with leading international adaptation research and practice. This includes involvement in the EU Pathways2Resilience project which is a key delivery mechanism for the EU adaptation mission.



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