Draft Scottish National Adaptation Plan (2024 – 2029) Actions today, for a climate resilient future[1]

Adaptation

Challenges like heatwaves, flooding, and accelerating sea level rise are affecting our countryside, towns, and cities, and we know these changes we are seeing now will only increase in the future.

To protect our communities, we need our places to adjust to the effects of climate change, and to reduce our need for coal, oil, and gas to limit further damage.

Adjusting to the current and future effects of climate change is 'climate adaptation'.

Reducing our greenhouse gas emissions from coal, gas and other sources is 'climate mitigation'. Scotland's target is to reach net zero emissions by 2045.

Lived and Local Experience

We are all living with climate change – now and into the future.

The effects of climate change are already being felt by people across Scotland. Extreme weather events like storms, flooding and drought, and other events such as wildfires and costal erosion that are linked to climate change, are putting more pressure than ever before on Scottish lives and livelihoods.

We know these impacts vary greatly depending on where you live. A coastal island community in the Outer Hebrides will be experiencing climate change differently to urban community on the banks of the Clyde.

That is why this consultation matters because, simply put, local and lived experience is a fundamental part of shaping effective adaptation action.

How is Scotland's climate changing? Climate trends and projections

1. What do you think the current effects of climate change are on people in Scotland?

Please give us your views

Scotland’s ten hottest years have all occurred since 1997 despite record keeping beginning in 1884[2], and Scotland’s highest ever temperature of 34.8°C was registered in July 2022[3], almost 2°C higher than the previous record.

Studies by the James Hutton Institute state that the climate is changing faster than previous predictions. In 2023, some areas in Scotland were already recording temperature increases of 2.5 degrees warmer than average which was forecast in climate modelling for 2020-2050. In addition, rainfall statistics are also at levels predicted for 2050.[4]

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[1] https://www.gov.scot/publications/public-consultation-scottish-national-adaptation-plan-2024-2029/documents/
[2] See Adaptation Scotland (2022) Adaptation Scotland:: Climate trends and projections
[3] See Met Office (2022) Record high temperatures verified - Met Office
[4] https://www.hutton.ac.uk/news/scotland%E2%80%99s-climate-changing-faster-predicted

With Scotland's climate changing faster than previously predicted, there is an increased likelihood of more frequent and more extreme weather events. Weather patterns in Scotland were found to have changed substantially since 1960 and changes that were expected to be seen over the next three decades are already happening.[5]

Scotland as a whole has become 20% wetter[6] with October 2023 seeing exceptionally heavy rainfall and flooding across Greenock, Dumbarton, Aberfoyle and Grangemouth, and more recently Storm Babet has caused significant flooding to civic infrastructure and properties, mainly affecting the East coast. This fits into a trend of increased average annual rainfall in Scotland in the past few decades, with an increasing proportion coming from heavy rainfall events.

Impacts on the people of Scotland as a result of climate change include increased flood risk, coastal change, damage to buildings and infrastructure through extreme weather events, and increased prevalence of pests and disease in the natural environment.

Climate change is also a key driver of the twin ecological crisis to climate change. Whether habitats are found on our mountain tops or our seabeds, all habitats are being directly or indirectly affected. More often, climate change will alter the intricate ecological balances that let plants and animals grow and thrive.

The people of Scotland are also being affected by climate change through disruption to essential services, including the supply and distribution of energy, water, communications and transport networks. 2023 was a year of extremes in Scotland, with a significant water scarcity situation developing in some areas in June while extreme rainfall events caused flooding and landslides in October. Hundreds of homes were flooded, roads were closed, rail services were disrupted, and millions of pounds of crops were lost.

2. What effects, if any, do you expect climate change will have on people in Scotland over the next five years?

The next Scottish National Adaptation Plan will cover the period of September 2024 to 2029.

Please give us your views

The following changes in climate that Scotland is already experiencing are projected to continue and intensify:

- Average temperatures will increase across all seasons
- Typical summers will be warmer and drier
- Increased risk of summer droughts, water scarcity and wildfires
- Typical winters will be milder and wetter
- Intense, heavy rainfall events will increase in both winter and summer
- Sea levels will rise
- Reduced frost and snowfall
- Increased risk of flooding

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[5] 2-page Executive Summary - climate trends-projections-extremes implications for Natural Capital and Policy 12-7-23.pdf (hutton.ac.uk)

[6] Scottish Government (2019) Appendix B: Environmental Baseline - Scottish climate change adaptation programme 2019-2024: strategic environmental assessment - gov.scot (www.gov.scot)

- Weather will remain unpredictable and may become more variable.
- Disruption to our energy supplies, infrastructure, business productivity and food supply
- Decrease in soil productivity and the health of our natural environment

Recent research on the potential impacts of climate change on Scotland's Natural Capital warns that increased water scarcity could impact food production, damage the ecology of our rivers and undermine efforts to restore peatlands, while increasing winter rainfall could increase the risk of flooding. The trends of increased warming and reduced rainfall in the spring and summer will also increase wildfire risk.[7]

The climate can be expected to become continuously more hostile until after net zero is reached on a global level – meaning the 2030s are expected to be more hostile than the 2020s and the 2040s more hostile than the 2030s etc.

3. What actions, if any, would you be willing and able to take to adapt to climate change?

You may wish to consider the action you could take a) in your community and b) around your home and/or business.

Please give us your views

a) Community

Adapting communities to the impacts of climate change, will be essential implementing measures such as:

- Naturalised parks and greenspaces
- Green streets, routes and buildings
- Raingardens, green roofs and green walls
- Local community food growing spaces
- Reconnecting floodplains
- Restoring wetlands, watercourses and peatlands
- Planting trees for canopy cover, biodiversity enhancement, flood attenuation and carbon sequestration.
- Redevelop derelict sites
- Encouraging diverse and connected habitats

These adaptation measures would bring additional benefits to communities and help develop climate ready places, such as opportunities for better active travel, more (and better) greenspaces and biodiversity value, safe recreation spaces, reduced pollution, new or improved social spaces, a more attractive area, improved health and wellbeing for the community.

The approved community-focussed adaptation action (below) is also being implemented into the Council's emerging Climate Action Plan.

1. Develop community-built resilience plans specifically for areas vulnerable to flooding and lower resilience areas.

[7] 2-page Executive Summary - climate trends-projections-extremes implications for Natural Capital and Policy 12-7-23.pdf (hutton.ac.uk)

- Investigate the potential to create climate and biodiversity community hubs (involving community groups) which provide a central location to co-ordinate emergency response to severe weather, access to local services and workspace bringing people together to develop local projects and social enterprises.

- Incorporate climate and biodiversity criteria for the development and implementation of place and locality plans. Achieved through generation of milestones and project targets.

- Investigate the potential to create climate and biodiversity education resources to equip communities with the knowledge and tools to become climate resilient.

- Explore options to provide climate resilience and biodiversity skills training to communities to support them in adapting to the challenges of severe weather events and protect and enhance local biodiversity.

In partnership with the local Third Sector Interface, the Council is also delivering free Carbon Literacy Training for Communities throughout 2024 (based on mitigation and adaptation) to increase the awareness, knowledge and potential for community participation and action. This training also offers 'Train the Trainer' training in the hope that cascading the training throughout the community will be more achievable and successful offering that additional element.

b) Business/Organisation

In addition to specific individual projects (either solely adaptation-based or as a co-benefit), approved adaptation actions being implemented into the Council's emerging Climate Action Plan, include:

1. Increase and improve resilience levels of transport networks and transmission infrastructure.

   - Identification of vulnerable sections of the transport network (road and active travel) frequently affected by weather events (e.g. flooding, road degradation, snow, ice). Transport can be disrupted by severe weather with knock-on effects that interrupt the flows of people and goods throughout the network. The resilience of transport networks, including active travel, can be increased through investing in maintenance, innovative engineering solutions and capital expenditure on improvements. Smart transport networks can improve response and communication.

   - Produce a resilience hierarchy in relation to the location, design and development of EV charging stations and infrastructure.

   - Increase the use of sustainable materials appropriate for a changing climate when building road / path infrastructure (including carbon accountancy of building materials).

   - Increase the use of permeable surfaces and surface water run-off management adapted to our changing climate. Inclusive of existing and new road proposals, and parking.

2. Undertake a feasibility study and implementation plan to deliver Climate Ready Planting

   - Map the opportunities for climate ready planting by habitat type (grassland, wildflowers, trees) and create prioritisation for habitat implementation by habitat type and the co-benefit that would alleviate problem (e.g. surface water management, overheating)

- Support habitat connectivity through the creation, enhancement and joining of habitat corridors (e.g. pollinator networks)

- Align the implementation plan with the LBAP and Greenspace Strategy

3. Undertake a SuDS audit and develop a Biodiversification improvement and management plan.

   - Conduct an audit by type of SuDS feature with ownership details and management of the features.

   - Develop a biodiversity value and habitat networking assessment framework to grade SuDS features on their biodiversity, habitat feature and water pollution characteristics.

   - Prioritise which SuDS features would be of biodiversity value to improve.

   - Develop implementation and management plan.

4. Proactively identify and deliver wetland habitat creation.

   - Development of a brief to target biodiversity and habitat connectivity enhancement, water quality improvements and natural flood management opportunities.

   - Desk and site-based ecological reviews, river catchment modelling and connectivity mapping exercises.

   - Recommendations to implement including costings.

5. Naturalisation and de-culverting of watercourses for biodiversity and flood attenuation.

   - Identify and implement river restoration projects, including phased plans for biodiversity enhancement.

   - Update organisation guidelines for new developments regarding best practice to be developed so developments are designed around watercourses or with daylighting as part of design.

6. Undertake a Nature-Based Surface Water Management programme

   - Identify problem areas for surface water management.

   - Identify and implement a mix of appropriate nature-based solutions and traffic / engineering solutions.

7. Identification of climate ready parks across the area.

   - Undertake an area-wide audit of parks and open space capacity for climate adaptation potential and deliver the recommendations.

8. Ensure that the Council has the relevant skills, knowledge and resources to deliver adaptation Options and Delivery Actions.

   - Undertake skills gap analysis in all relevant policy and project delivery services of the organisation to ensure delivery of nature-based solutions.

   - Develop and roll-out a programme to upskill existing operational staff and identify projects with key partner agencies.

- Deliver Carbon Literacy Training to Elected Members, Senior Management and throughout the organisation.

9. Develop strengthened actions for the role of the natural environment (including blue and green infrastructure) in emerging LDP3.

   - Creation of brownfield site hierarchy screening checklist for development sites.

   - Development of a fossorial water vole trigger map.

   - Development of guidance on nature networks and green corridors.

   - Develop buffers from key ecological sites (LNR, LNCS) and ecologically sensitive habitats (protected species).

   - Strengthen protection for trees in allocated development sites.

   - Development of ecological and climate constraint maps for allocated housing sites.

   - Develop an effective post-development monitoring framework to ensure compliance with planning constraints and annual review of projects development. Funding allocated for biodiversity and climate adaptation and mitigation should be ring-fenced.

   - Incorporate climate change (adaptation and mitigation) into Developer Contribution policies.

   - Development of an adaptation retrofitting framework to promote and develop climate resiliency within existing buildings and developments.

   - Develop policy framework to restrict development within flood risk areas and appropriately zone construction proposals to consider flooding (at various scales 1:100 events etc).

10. Development of the Authority Construction Requirements in alignment with Climate Change and relevant Sustainability Policies.

    - Development of housing (council estate) should be undertaken in accordance with the ACR and the Climate Action Plan requirements and align ACR with existing and emerging building standards regulations.

11. Ensure climate adaptation and building resilience is adequately financed.

    - Investigate the flexibility of the 10-year capital budget - needs to reflect societal and policy changes (inflation, cost-of-living emergency and climate change/ecological emergencies).

    - Consider ring-fencing a percentage of allocated service budgets to the implementation of climate action (both mitigation and adaptation).

    - Investigate finance mechanisms to deliver climate adaptation.

    - Continue to collaborate with Climate Ready Clyde (and Partner organisations) on the development of a City-Region Adaptation Finance Lab.

12. Improve "Best value" process to raise the priority of sustainability and climate change criteria in procurement processes

    - Develop a methodology for climate and biodiversity oversight of decision-making.

- Create a stage in the procurement process for Sustainability Policy Team to be consulted on the carbon and biodiversity costs associated with any major development or high value purchases.

- Investigate the potential to embed a sustainability procurement officer.

13. Support communities to build resilience and create climate ready places throughout the authority area.

    - Develop community-built resilience plans specifically for areas vulnerable to flooding and lower resilience areas.

    - Investigate the potential to create climate and biodiversity community hubs (involving community groups) which provide a central location to co-ordinate emergency response to severe weather, access to local services and workspace bringing people together to develop local projects and social enterprises.

    - Incorporate climate and biodiversity criteria for the development and implementation of place and locality plans. Achieved through generation of milestones and project targets.

    - Investigate the potential to create climate and biodiversity education resources to equip communities with the knowledge and tools to become climate resilient.

    - Explore options to provide climate resilience and biodiversity skills training to communities to support them in adapting to the challenges of severe weather events and protect and enhance local biodiversity.

    - Deliver Carbon Literacy Training for Communities (mitigation and adaptation) to increase the awareness, knowledge and potential for community action.

14. Develop a climate change and biodiversity impact assessment, which is to be undertaken at the inception of every project / policy under development and Council decision-making.

    - Implement the SSN checklist in alignment with wider regional approach.

    - This assessment will be integrated as a key requirement through the Council's existing Impact Assessment Guide and Council / Committee approval process.

15. Embed and mainstream adaptation considerations and actions throughout the Local Authority.

    - Support services in the implementation of adaptation options and delivery actions through the Climate Action Plan.

    - Work towards mainstreaming climate adaptation within Council processes and decision-making.

    - Support the development of and delivery of a retrofitting framework to promote and develop climate resiliency.

    - Develop a standardised approach to climate change (mitigation and adaptation) through Service, Corporate and Civil Contingency Risk Registers.

16. Develop an internal process to comprehensively record the impacts of climate change on Council Services, Infrastructure and Operations.

- Develop a standardised data management and recording process.

- Implement and promote the agreed process across the organisation to record the impacts of extreme weather events on an annual basis to assist with monitoring, data gathering and baselining.

17. Protect critical services (external and internal) to ensure functionality in our changing climate.

    - Assist partners to undertake an audit of external critical infrastructure and services (HSCP, NHS / Ambulance Service, Police Scotland, Fire Service).

    - Investigate the scope to expand current emergency response plans to produce an extreme weather event multi-hazard early warning system in alignment with GCR approach within CRC Climate Adaptation Strategy and Action Plan Flagship Action 5.

    - Conduct an audit of current emergency mobilisation plans for extreme weather events, including water and energy shortages incorporating an area-wide vulnerability mapping exercise.

18. Peatland conservation and restoration across the organisation.

    - Undertake area-wide baseline and feasibility study for peatland habitats and develop management plans for identified habitats.

    - Identify potential peatland restoration plans and align conservation and restoration works with carbon sequestration requirements identified through the mitigation work informing the Climate Action Plan.

19. Ensure the organisation estate is resilient to climate change (including but not limited to offices, schools, leisure facilities, community facilities).

    - Undertake an audit of the Council estates resilience to the impacts of climate change to develop an evidence base and required adaptive measures.

    - Implement all Audit recommendations for adaptation and nature-based solutions to build resilience of the organisational estate.

4. What factor(s), if any, would prevent you from taking action to adapt to climate change and become more climate-resilient?

Please give us your views

There are a number of key limitations and barriers to effective action on climate adaptation, including:

- Lack of capacity: Inadequate resources to plan for and deliver adaptation measures, including available funding. As set out in this consultation, the global funding flowing into adaptation, from public and private sources, is 90% lower than is required to prepare for climate impacts which highlights the scale of finance gap.
- Mitigation vs Adaptation: Perception shift, which currently prioritises climate mitigation and net zero targets rather than recognising the intrinsic link and tackling climate mitigation and adaptation in parallel. There is constant pressure and competing issues and organisational requirements that take priority. To achieve net-zero as an organisation or nationally, we must

also continue to raise ambitions on adaptation to ensure we are resilient to the challenges of a changing climate.

- Data: Availability of effective data regarding climate risks and opportunities at all levels and the clarity of ownership of risks and required responses.
- Uncertainty of Data: Complexity of adapting for an uncertain future. Flexibility needs to be built into the adaptation planning process to take into account the inherent uncertainty particularly regarding the magnitude of risks and urgency of action.

5. What action(s) do you think the Scottish Government should prioritise in order to build greater resilience to the impacts of climate change?

Please give us your views

The allocation of specific adaptation related funding packages for public bodies (at a regional or local level) should be an area of Government focus in order for the public sector to deliver the level of resilience planning and implementation required throughout the country in the anticipated timescales.

There is a massive opportunity to align investment in nature with 3 outcomes - climate resilience (soil, water, provisioning services), biodiversity (reinforces resilience plus wider wellbeing etc), and carbon sequestration (sustaining existing stock, increasing capture). However, this needs to be one of the core priorities for Government (and all public bodies) built into all service delivery and supported in equal measure by the required investment from the private sector.

The Government should encourage and fund regional partnerships throughout Scotland, such as Climate Ready Clyde, to reduce duplication of work by neighbouring authorities, pool resources, enable collaborative adaptation action and provide greater opportunities for significant co-benefits.

Greater clarity and leadership on public body standardised adaptation requirements, reporting duties and publishing progress on adaptation linked to the level of recorded risk and need. This needs to be shadowed by adequate resourcing and funding support for Local Authorities to meet these demands.

Within the draft plan there is a focus on outcomes, but one of the outcomes we need is a common view of decision making/scenarios/tools, to help public bodies build the case for long-term whole life costs/benefit and put in place the strategic long-term adaptation pathways. This should be considered as part of the SNAP3 but also in the revision of Statutory Guidance.

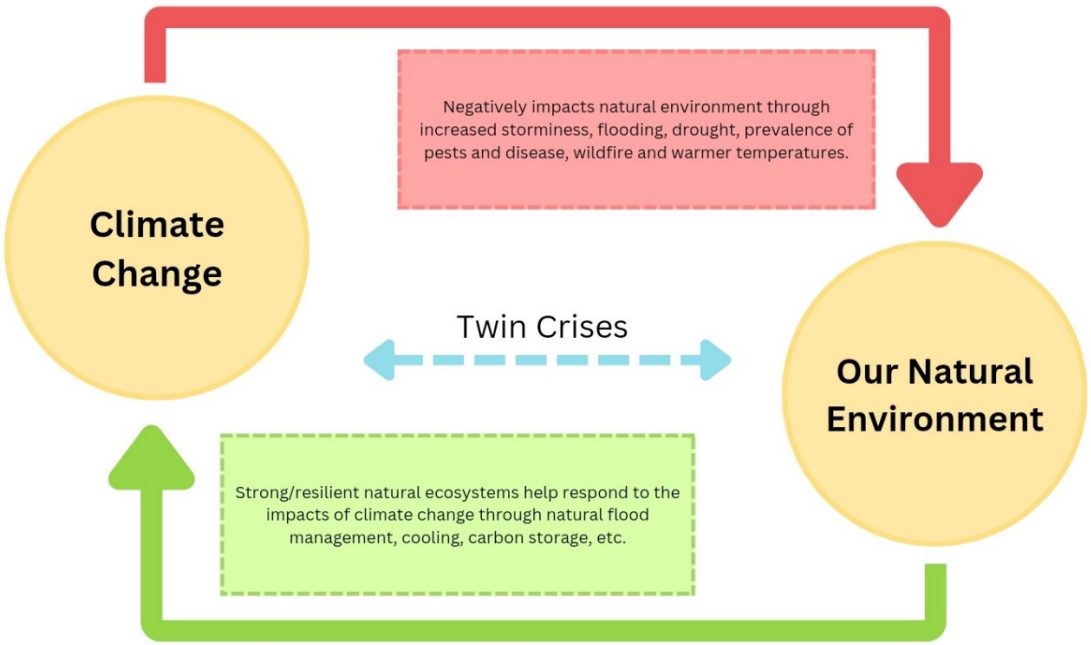
Aligned to the point above, the cost-benefit analysis aspect needs to be considered by the Scottish Government and how much public bodies are constrained by short-term thinking and finance challenges. This is usually 5 years, although the challenges have become greater where we are essentially now budgeting on a year-to-year basis. Therefore, current budget constraints are resulting in even less certainty in terms of programming funding and staff resources for public sector bodies. Government support to enable public bodies to look at lowest whole life cost out to 2080 within current investment choices would allow authorities the ability to build this into sensible and strategic adaptation pathways and options. Guidance on how public bodies should better evaluate the distribution of costs and benefits (current tools tend to assess aggregate cost-benefit but most issues lie in distribution.

Outcome One: Nature Connects

Outcome 1: Nature connects across our lands, settlements, coasts and seas

Addressing the impacts of climate change must have nature at the centre. Both because climate change is degrading our natural environment and it must be protected and restored in its own right, but also because nature is one of the best tools we have to adapt to the changing climate.

The below diagram outlines the interconnected relationship between climate change and our natural environment, often referred to as a 'twin crisis'.



6. The draft Adaptation Plan sets out actions which will be taken to protect and restore nature. Which of the following actions proposed around protecting and restoring nature should the Scottish Government prioritise for a better adapted Scotland?

Please check all that apply.

☒ More trees and green spaces in built-up places for flood resilience and cooling

☒ More joined up natural habitats (“nature networks”)

☒ Managing pests and diseases which will be more prevalent with climate change

☒ Restoring forests and peatland

☒ Reinforcing natural coastal barriers such as dunes

☐ Other

If you selected 'other', please share detail below

7. When you consider your local natural space e.g. park, canal, woodland or beach, what would you like to see improved in terms of blue and green space in your local area?

What is Blue-Green Infrastructure?

Blue-green infrastructure (BGI) is a subset of nature-based solutions. It is the green and blue features of natural and built environments and the connections between them that provide benefits for people and nature.

- Green features include parks, woodlands, trees, play spaces, allotments, community growing spaces, outdoor sports facilities, churchyards and cemeteries, swales, hedges, verges, green roofs and gardens.
- Blue features include rivers, lochs, wetlands, canals, ponds, porous paving and sustainable urban drainage systems.
- Paths, cycleways and green corridors such as rivers provide connections through and between areas of green infrastructure.

Please give us your views

By integrating BGI across our urban fabric we can ensure that nature and the outdoors are accessible to everyone, supporting lifelong health and wellbeing and creating places that are more resilient to climate change. There are four areas of BGI which could be improved to provide canopy cover, reduce the heat island effect, improve health and wellbeing, increased natural carbon storage, improved habitat connectivity, biodiversity enhancement, reduce pollutant levels, improving air and water quality, improving flood attenuation and surface water management. These include:

- Urban greening: Improving the place offer of settlements. Tree planting, rain gardens, wild planting or planting as natural barriers can reduce pressure on urban spaces as a result of surface water management issues lack of urban biodiversity or connectivity. Improving natural assets in traditionally urban spaces will link to wider BGI principles providing opportunities for habitats and species to thrive.
- Integrating BGI into new developments (and urban redevelopment): This is an opportunity for protect existing on-site biodiversity and ecological value while providing additional opportunities to reduce the impacts of development and provide climate-ready places.
- Nature networks and active travel corridors: To deliver local living and 20-minute neighbourhoods will require significant improvement and enhancement to sustainable transport corridors utilising BGI.
- Green links from urban to rural: Improving and encouraging the access to and use of green spaces is essential to raise health and wellbeing outcomes and create a more pleasant area to live, work and visit with a focus on natural capital.

Outcome Two: Communities

Outcome 2: Communities are creating climate-resilient, healthy and equitable places.

The climate emergency means that Scotland's places are experiencing more frequent extreme weather. To protect our communities, we need to improve our places to adjust to the effects of climate change, and to reduce our need for coal, oil and gas. Our places are unique and building on their strengths can help us navigate the difficulties of climate change.

But we can't make these changes alone. Politicians, communities and place-makers will all need to cooperate to ensure that Scotland's places are designed with tackling climate change and improving people's wellbeing at their heart. Across Scotland we will need to imagine, experiment, learn, innovate and adapt our places together.

Please refer to the consultation document for policy detail proposed in the draft Adaptation Plan relating to Outcome Two: Communities.

8. For Scotland to adapt to the impacts of climate change, lots of different groups, such as individuals, communities, businesses and public bodies, will need to work together and support each other. How could others support you (or your organisation) to adapt to climate change over the next five years?

Please give us your views

Collaboration will be essential in order to deliver the Council's comprehensive list of adaptation action through the emerging Climate Action Plan. In the next 5 years a close working relationship with all stakeholders (internal and external) will enable the successful implementation of required actions.

One of the key aspects is that stakeholders need to be open and willing to engage, whether that's through the sharing of data or adaptation projections and plans, this will help reduce duplication of effort and resources and result in additional or wider adaptation opportunities and benefits.

Significant Government support, both financial and resource-based, will be essential for public bodies to meet the challenges of our changing climate and deliver on the action required to build resilience within organisations and area-wide. In the next 5-10 years it'll be even more important in an attempt to take advantage of early, preventative action as the cost of inaction will be significantly greater.

Central government, public bodies and stakeholders should continue to work on flooding and climate forecasting and early warning systems, which will help inform the adaptation action required and provide additional support for communities during extreme weather events.

It will also be essential for neighbouring local authorities, other public bodies and city-region partners (where relevant) to collaborate on adaptation planning and projects to make the most of the opportunities and co-benefits adaptation action can provide. This is particularly important for cross-boundary issues and the need for BGI, such as river restoration projects, natural flood alleviation schemes, nature networks etc. Co-funding projects with neighbouring authorities (as well as central government or partner organisations) may also improve the outcomes of certain projects and make a larger number of adaption options more viable and feasible to deliver.

Community involvement will be a key aspect to gain local knowledge of issues within community areas, learn what communities want from their area, create more resilient places and build a sense of ownership or certain community-based projects for example. Involving communities in established

network or new working groups/forums, Climate Action Hubs, would be a step forward to drive adaptation with a community-led and place-based focus.

9. In what way(s) could the plan help different groups across Scotland and/or its regions to collaborate on climate adaptation?

Please give us your views

Using successful models and case studies from within Scotland, UK or internationally, it would be useful to learn the lessons from other collaborative projects to inspire action and take advantage of the work already being done regarding adaptation.

From a geographic perspective (as set out in Question 5), the Government could encourage and fund regional partnerships throughout Scotland, such as Climate Ready Clyde, to reduce duplication of work by neighbouring authorities, pool resources, enable collaborative adaptation action and provide greater opportunities for significant co-benefits.

It would be useful for the plan to define specific roles and responsibilities with a particular focus on the allocation and ownership of risks coupled with specific action required, funding mechanisms available to take action and monitoring procedures.

Outcome Three: Public Services and Infrastructure

Outcome 3: Public services are collaborating in effective, inclusive adaptation action.

The public sector is playing a crucial role in delivering action to enable Scotland to adapt to the impacts of climate change.

Adaptation also needs to be aligned with a public sector organisation's strategic outcomes and priorities; and with those it contributes to locally. By doing this, adaptation becomes integral to the functions of an organisation and its ability to achieve outcomes. It can also be more efficient, with cost savings made possible when adaptation is delivered as part of business-as-usual rather than an additional activity.

10. Advice from the Climate Change Committee (the Scottish Government's independent advisors on Climate) is to adapt to 2ºC of warming and assess the risk for 4ºC. To what extent do you agree with this advice?

Scotland's net zero targets are part of global efforts to limit climate change to 1.5°C. But we know that the future is uncertain. The Climate Change Committee's advice is to adapt now to a minimum average global temperature rise of between 1.5 and 2°C for the period 2050 – 2100 and consider the risks of up to a 4°C warming scenario.

☒ Strongly Agree

☐ Agree

☐ Disagree

☐ Strongly Disagree

11. Would further guidance on future climate scenario(s) be useful when making plans and investment decisions?

☒ Yes

☐ No

12. If yes, what sort of information or advice would be useful for you or your organisation when considering future climate scenarios in long-term planning or investments?

Identifying the significance of risks for each scenario would be a valuable resource. Aligning climate scenarios with these associated risks through national climate risk assessment is useful for public bodies to identify areas of concern that will affect their operations and responsibilities and allows them to undertake regional or local risk assessments using that data and develop adaptation actions remove or reduce the anticipated impacts. Additional guidance on transposing this information into a regional or local level would be a useful step forward.

New guidance and advice regarding cost-benefit analysis would also be valuable when making long-term planning and investment decisions.

13. Would an assessment of "cascading" risks from weather-related disruptions to infrastructure help you or your organisation to adapt?

Climate change makes extreme weather more likely in Scotland. When weather events disrupt one part of our infrastructure (e.g. energy, telecoms, transport networks), the impacts can quickly "cascade" out to disrupt other infrastructure networks or vital services. For example, an interruption in electricity will quickly affect businesses, hospitals and transport.

☒ Yes

☐ No

Outcome Four: Economy, Business and Industry

Outcome 4: Economies and industries are adapting and realising opportunities in Scotland's Just Transition.

Resilience to the impacts of climate change will be crucial to ensuring the future security and prosperity of Scotland's economy. The economic costs of climate change in Scotland are high. For example, the estimates of flood damages to property in Scotland alone vary from £200m to £250m per year.

With a changing climate there are not just costs, but economic opportunities as well. For example, the growth of sectors, services and products which help us adapt to future climate conditions and build resilience to physical climate-related hazards.

The policies outlined in the draft Adaptation Plan, which can be found in the consultation document, for Outcome four: Economy, Business and Industry aim to build resilience to the long-term economic costs of climate change and maximise the economic opportunities.

14. What, if any, are the barriers to businesses accessing advice and support on climate risks?

Evidence suggests more Scottish businesses should be assessing and responding to climate risks.

Please give us your views

Information and knowledge gaps on top of the turbulent market due to material costs and inflation are restricting business acknowledgement and drive for adaptation. Improving the understanding of climate risks and associated impacts is required across all sectors of the economy. This could drive forward resilience planning and lead to more productive discussions surrounding supply chains and the specifications of required goods and services taking into account adaptation and resources.

General upskilling of the workforce to better understand climate risks and impacts will yield significant long-term benefits for Scottish businesses.

15. How do you anticipate disruption to domestic and/or international supply chains caused by climate change will affect Scottish business, industry and consumers?

Please give us your views

Disruption to supply chains caused by climate change-related impacts (such as sea level rise, rising global temperatures, drought, flooding, storms, wildfires and other forms of extreme weather) are already evident and predicted to become even more intense and frequent in the coming decades. These impacts will continue to affect business and industry in all sectors through supply chains causing significant delays, failure to produce or distribute goods and services and result in more frequent higher monetary losses. Supply chain impacts could undermine business validity due to interruption both of supply sourcing and access to markets.

Consumers (organisations and individuals) are likely to continue to be adversely impacted as a result of inflated prices due to the higher business/industry costs being passed down by suppliers to compensate for profit-loss caused by climate-related disruption and lack of resiliency.

The supply chain (part of scope 3 emissions) also accounts for a significant proportion of most organisations' total emissions. If this was to increase due to lack of resiliency in the supply chain, then this could put additional pressures on the ability of organisations to meet net zero targets. This could result in significant offsetting requirements for organisation rather than as a last resort after direct mitigation actions.

16. What, if any, should the role of government be in supporting more resilient supply chains?

Please give us your views

Central government should identify the need to shift the focus of supply chains from efficiency to resilience. Climate change is just one of many risks and disruptions affecting operations and supply chains, including: operational risk, logistical disruption, geopolitical crisis, cyber insecurity, financial

crisis, natural disasters and pandemics. The government should help design a system for the public sector based on improving:

- Visibility: Improve visibility of the complete supply chain to identify the whole risk profile.
- Flexibility: ability to adapt quickly without impacting functions or operational cost.
- Collaboration: develop interdependent relationships and systems with key industry partners.
- Control: develop robust procedures to increase the span of control of supply chains.

Additional support and guidance regarding public sector procurement and supply chains is a key role for central government to provide. Clarification on how to successfully integrate climate change impacts into the process and what the expectations are for public bodies would be welcomed with respect to climate adaptation, mitigation and circular economy.

17. How should farming, fishing and forestry businesses be supported to adapt to climate change?

Please give us your views

These industries are particularly exposed to climate change as they rely on natural resources. Climate impacts such as increased rainfall, changes in weather patterns and temperature and new pests and diseases leave these businesses vulnerable to climate change.

Delivery of a forestry Resilience Action Plan in 2024 supported by the required investment is a useful step for climate adaptation through forestry. However, this should focus on conservation, protection, restoration as a well as sustainable forest management practices. The Forestry Strategy 2019-29 intends to increase Scotland's adaptability and resilience of forests and woodland.

Climate change affects the fishing industry in a number of ways, including the distribution of fish stocks. The carbon footprint of the industry will increase as a result of overfishing when fish populations are not replenished. Exacerbating climate change impacts will have additional impacts on the industry through rise in ocean temperatures, ocean acidification and deoxygenation. Support to increase and improve sustainable fishing practices would help the industry to reduce carbon emissions by increasing efficiency while also leading to ecological benefits. All support for this industry needs to be based on scientific research of associated risks and opportunities, be well-balance and sustainable.

The proposed policy to make half of agricultural funding conditional on delivering for climate and nature, including climate adaptation, is a useful step highlighting the government's commitment to the twin climate and ecological crisis. However, this be accompanied by a comprehensive support framework and programme of knowledge and awareness raising initiatives to improve the awareness of risks and best practice case studies of adaptation measures and projects, particularly for smaller companies and consumers. This will assist in the implementation of the policy proposal as farmers play a significant role in protecting and enhancing carbon stores and sinks as key land managers of peatland, woodland and other natural features on their lands.

18. What, if any, do you think are the business and innovation opportunities arising from climate change in Scotland?

Please give us your views

There are some opportunities arising from climate change in Scotland and UK-wide across different sectors, including:

- Built environment:
    - New developments (domestic and commercial scale) can help drive innovation in technology, energy and water management.
    - Demand for retrofit solutions (e.g. renewable energy technologies, fabric efficiency measures and flood protection) will increase in line with adaptation awareness (homeowners and developers)
    - Blue-Green Infrastructure will become increasingly more important in terms of climate resiliency through re-designing and engineering urban areas.
- Water:
    - Increased need for integrated drainage solutions and surface water management measures.
    - Increased need for consultancy services to provide risk assessment and analysis, modelling and engineering services.
- Energy:
    - Increased demand for adaptation measures and building resilience of existing and new build energy infrastructure.
- Transport:
    - Increased demand for the assessment and implementation of adaptation measures required for road and rail networks and infrastructure in terms of modelling, risk management etc.

An opportunity across all sectors will become more evident over the next decade when/if climate mitigation and adaptation considerations are integrated into all organisation decision-making, planning and investment decisions as standard rather than a separate add on consideration.

19. What, if any, support would be required to encourage businesses in Scotland to take advantage of innovation opportunities arising from climate change?

Please give us your views

Set out in Question 17.

A comprehensive programme of knowledge and awareness raising with a particular focus on the climate risks associated for each industry, the cost-benefit analysis and wider benefits of making their business practices more resilient to our changing climate.

Outcome Five: International Action

Outcome 5: Scotland's international role supports climate justice and enhanced global action on climate adaptation.

20. How could the Scottish Government support communities impacted by climate change across the world?

Please give us your views

We broadly agree with the policy proposals regarding international climate support, through the following proposed measures:

- Deliver Scotland's world's first - and recently trebled - £36 million Climate Justice Fund.
- Continue to use our platform as an international climate leader to influence and engage on climate adaptation, mitigation and loss and damage.
- Provide a platform to amplify the voices of those communities most vulnerable to climate change, including women, young people and indigenous groups.
- Create an Adaptation and Resilience Knowledge Exchange Network

21. Scotland is known for its excellence in climate change research. Are there international adaptation focussed research opportunities which Scottish-based academic work should focus on?

Please give us your views

n/a

Enabling Factors

22. What do you see as the main barrier to private investment for adaptation action?

Please give us your views

The main barriers to private investment in adaptation related projects, include:

- Markets and Revenue: Adaptation actions can deliver significant economic benefits, but often lack financial returns. In comparison to climate mitigation, adaptation projects often do not create revenue streams.
- Lack of Information: There is a lack of reliable, accessible information on climate risk and benefits (specifically monetised) of adaptation actions.
- Creating 'bankable' adaptation projects: Developing viable, investment-ready adaptation projects is more complex in comparison to mitigation projects. This is partly due to the complexity of adaptation projects, particularly nature-based solutions, in respect of multiple stakeholders, more time and resources to develop projects and difficulty in assessing and outlining the benefits. In addition, adaptation actions are often site and context specific which are not easily replicable at scale.
    - There is also a mismatch in timing as adaptation actions involve up-front costs, to deliver medium and long-term benefits.
- Legislative, Regulatory and Policy Framework: Additional regulation can support adaptation action in the future. However, investment in innovative projects and the inherent risks these create can be a significant barrier to project developers.
    - Conflicting or competing policy objectives and competition for public finance resources is also a key related point.

23. How can the Scottish Government support or incentivise more private investment in adaptation action?

Please give us your views

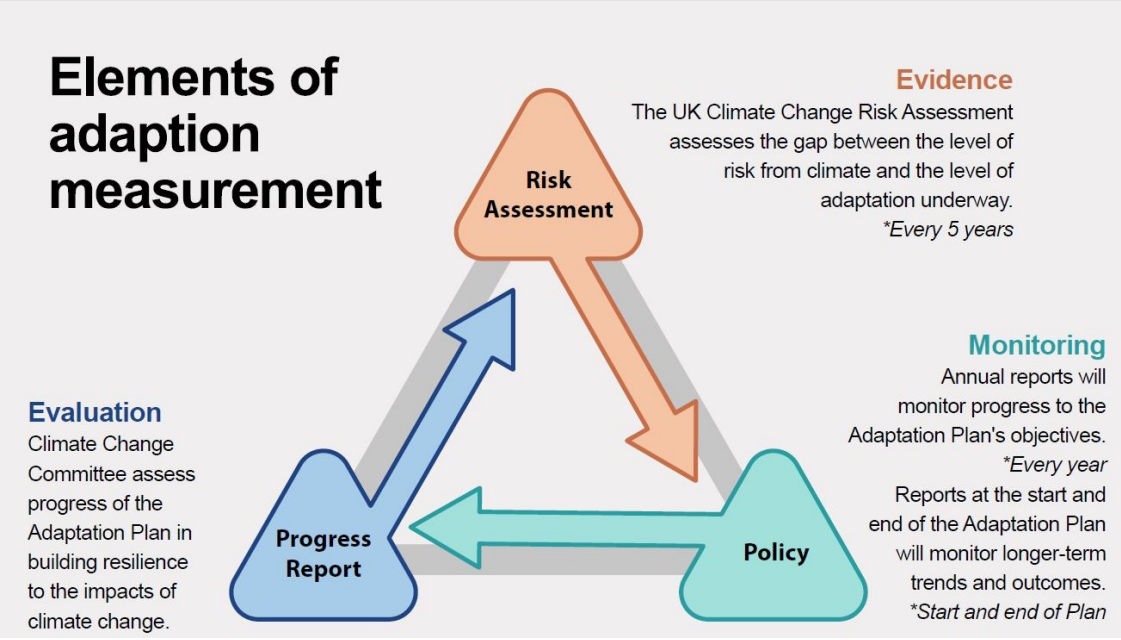
The Scottish Government should work with the Committee on Climate Change, Adaptation Scotland, COSLA, regional adaptation bodies (such as Climate Ready Clyde), the insurance industry, higher education sector and key investment funds to identify public bodies (in particular Local Authorities) to remove existing barriers and increase the ability of co-financing adaptation projects to reduce risks and incentivise private investment.

We agree that blended finance models, open data platforms and grant funding schemes for adaptation project delivery are clear pathways that the Scottish Government should take forward to incentivise private investment and drive adaptation action nationally.

24. The proposed approach to monitoring and evaluating progress of the Adaptation Plan is set out below. Do you agree with the proposed approach to monitoring adaptation?

The draft Adaptation Plan sets out plans to develop an adaptation monitoring and evaluation framework. Our proposed approach is for annual reports to include a set of quantitative indicators to monitor progress to the Adaptation Plan's objectives. In addition, we propose to publish a baseline at the start and report on progress at the end of the Adaptation Plan to track longer-term outcomes.

The below graphic illustrates the elements of adaptation measurement.



☒ Strongly Agree

☐ Agree

☐ Don't know

☐ Disagree

☐ Strongly Disagree

25. Do you have suggestions of data or indicators that could be used to track adaptation outcomes in Scotland?

Please give us your views

The example below is a possible route to help with the overall monitoring and evaluation of the Plan at a national level.

Using an assessment of the City-region baseline data, the Glasgow City Region Climate Adaptation Strategy created targets and benchmarking measures to monitor its success post-adoption to:

- Increase the resilience of over 140,000 of the region's most vulnerable people to the impacts of climate change.
- Close the region's adaptation finance gap of £184million a year.
- Involve 125 new organisations, community groups and business supporting Glasgow City Region to adapt.

In addition, tracking the impact of extreme weather events by economic cost should be considered. The Scottish Government could monitor if there were a specified number of events, which caused six / seven figure 's worth of damage in Scotland in any given year. There may be an opportunity for the Climate Intelligence service to have a role in this data gathering and analysis.

Impact Assessments

It is important that the Adaptation Plan delivers a just distribution of the costs and benefits associated with climate resilience measures and avoids any unjust negative impacts.

The following questions will inform the impact assessments in considering the possible effects and outcomes of the Adaptation Plan on people, businesses, and communities.

26. What, if any, impacts do you think this Adaptation Plan will have on groups/individuals who share protected characteristics?

Please give us your views

The Plan has the potential to significantly reduce inequality by increasing the of resilience levels (ability to proactively adapt to our changing climate and react to extreme weather events) of the most vulnerable people and communities in our society.

27. In respect to protected characteristics, what, if any, measures could be taken to strengthen any positive impacts or lessen any negative impacts of the draft Adaptation Plan?

Please give us your views

Specific outcomes and monitoring indicators could be created to match each of the protected groups/individuals.

28. What, if any, impacts do you think the proposed Adaptation Plan will have on inequality caused by socio-economic disadvantage?

Please give us your views

Set out in Question 26.

29. In respect to inequality caused by socio-economic disadvantage, what, if any, measures could be taken to strengthen any positive impacts or lessen any negative impacts of the draft Adaptation Plan?

Please give us your views

The Plan should provide a focus on those most vulnerable people and communities in our society.

30. What, if any, impact do you think the Adaptation Plan will have on children's rights and wellbeing?

Please share your views

The Plan should have a positive impact on children's rights and wellbeing with a particular focus on the Plan Outcomes (Nature Connects; Communities; Public Services and Infrastructure; Economy, Industry and Business; and International Action) and addressing twin climate change and ecological crisis. The Plan should also protect the rights of children to a clean, healthy and sustainable environment.

31. What, if any, measures could be taken to strengthen any positive impacts or lessen any negative impacts of the draft Adaptation Plan on children's rights and wellbeing?

Please give us your views

None

32. What, if any, impacts do you think the Adaptation Plan will have on Island communities?

The Islands (Scotland) Act 2018 came into force on 23 December 2020. This contained a requirement for relevant authorities to carry out an Island Communities Impact Assessment on strategies which are likely to have an effect on an island community which is significantly different to other communities (including other island communities) in Scotland. This measure is designed to meaningfully improve outcomes for island communities.

Please give us your views

n/a for our organisation

33. What, if any, measures could be taken to strengthen any positive impacts or lessen any negative impacts of the draft Adaptation Plan on Island communities?

Please give us your views

n/a for our organisation

About You

Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to published. If you ask for your response not to be published, that is not a problem, we will still take account of your views in our analysis but we will not publish your response, quote anything that you have said, or list your name. We will regard your response as confidential, and we will treat it accordingly.

To find out more about how we handle your personal data, please see our privacy policy. By clicking submit you agree to our privacy policy.

34. What is your name?

Neil Samson

35. Are you responding as an individual or an organisation?

☐ Individual

☒ Organisation

36. What is your organisation?

If responding on behalf of an organisation, please enter the organisation's name here.

If you are responding as an individual you can leave this blank.

East Dunbartonshire Council

37. Further information about your organisation's response

Organisations may use this space to provide additional context for their response. This could be information about, for example:

- any research your organisation undertook to inform the response
- any engagement with your members or audience undertaken to inform the response

This is optional.

Please add any additional context

A draft consultation response, along with a Technical Note regarding the draft SNAP was provided to Elected Members and Senior Management to provide an opportunity to review and contribute to the council response.

38. The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

☒ Publish response with name

☐ Publish response only (without name)

☐ Do not publish response

Information for organisations only:

The option *'Publish response only (without name)'* refers only to your name, not your organisation's name. If this option is selected, the organisation name will still be published.

If you choose the option *'Do not publish response'*, your organisation name may still be listed as having responded to the consultation in, for example, the analysis report.

39. Do you consent to Scottish Government contacting you again in relation to this consultation exercise?

☒ Yes

☐ No

40. What is your email address?

If you would like to be contacted again in future about this consultation please enter your email address here. You will also need to give permission to be contacted in the question above.

Your email address will never be published.

Email

Neil.samson@eastdunbarton.gov.uk

41. I confirm that I have read the privacy policy and consent to the data I provide being used as set out in the policy.

Privacy Policy

☒ I consent

Evaluation

Thank you for your consideration of the draft the Adaptation Plan.

As noted, we are all living with climate change and that is why your views and lived experiences of climate impacts are so crucial to shaping an effective national response.

The public consultation period on the draft the Adaptation Plan will run until the end of April 2024. Besides opening the draft the Adaptation Plan for consultation, via the Scottish Government's Citizen Space platform, we will also be running a series of public and stakeholder engagement events during the consultation period.

Publication of the final the Adaptation Plan is scheduled for Autumn 2024.

42. Please help us improve our consultations by answering the questions below. (Responses to the evaluation will not be published.)

How satisfied were you with this consultation?

☐ Very dissatisfied

☐ Slightly dissatisfied

☐ Neither satisfied nor dissatisfied

☐ Slightly satisfied

☒ Very satisfied

Please enter comments here.

How would you rate your satisfaction with using this platform (Citizen Space) to respond to this consultation?

☐ Very dissatisfied

☐ Slightly dissatisfied

☐ Neither satisfied nor dissatisfied

☐ Slightly satisfied

☒ Very satisfied

Please enter comments here.