

CONSULTATION

Response Document



Flood Resilience Strategy

13th August 2024

Introduction to CIEEM

The Chartered Institute of Ecology and Environmental Management (CIEEM), as the leading membership organisation supporting professional ecologists and environmental managers in the United Kingdom and Ireland, welcomes the opportunity to comment on this consultation.

CIEEM was established in 1991 and has over 7,000 members drawn from local authorities, government agencies, industry, environmental consultancy, teaching/research, and voluntary environmental organisations. The Chartered Institute has led the way in defining and raising the standards of ecological and environmental management practice with regard to biodiversity protection and enhancement. It promotes knowledge sharing through events and publications, skills development through its comprehensive training and development programme and best practice through the dissemination of technical guidance for the profession and related disciplines.

CIEEM is a member of:

- Scottish Environment Link
- Wildlife and Countryside Link
- Northern Ireland Environment Link
- Wales Environment Link
- Environmental Policy Forum
- IUCN – The World Conservation Union
- Professional Associations Research Network
- Society for the Environment
- United Nations Decade on Biodiversity 2011-2020 Network
- Greener UK
- Irish Forum on Natural Capital (working group member)
- National Biodiversity Forum (Ireland)
- The Environmental Science Association of Ireland

CIEEM is also a:

- UN CBD Observer
- UN FCCC Observer

CIEEM has approximately 780 members in Scotland who are drawn from across the private consultancy sector, NGOs, government and SNCOs, local authorities, academia and industry. They are practising ecologists and environmental managers, many of whom regularly provide input to and advice on land management for the benefit of protected species and biodiversity in general.

This response was coordinated by Members of our [Scotland Policy Group](#).

We welcome the opportunity to participate in this consultation and we would be happy to provide further information on this topic. Please contact Jason Reeves (CIEEM Head of Policy) at JasonReeves@cieem.net with any queries.

Respondent Information Form

Please Note this form **must** be completed and returned with your response.

To find out how we handle your personal data, please see our privacy policy:
<https://www.gov.scot/privacy/>

Are you responding as an individual or an organisation?

- Individual
 Organisation

Full name or organisation's name

Chartered Institute of Ecology and Environmental Management (CIEEM)

Phone number

01962 436279

Address

Grosvenor Court, Ampfield Hill, Ampfield, Romsey

Postcode

SO51 9BD

Email Address

policy@CIEEM.NET

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

- Publish response with name**

Information for organisations:

The option 'Publish response only (without name)' is available for individual respondents only. 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

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

- Yes**

Guiding principles

1. **Do you support the change from fixing flooding problems to creating flood resilient places? Yes**

Please give the reason(s) for your answer.

'Hard' engineering methods of flood control still have a role, but the implementation of Nature-based Solutions (NbS) and Blue-Green infrastructure (BGI) in places where they are most effective, should reduce pressure on hard defences by reducing the rate of water entering management systems through storage of water in upland peatlands and water bodies, interception of water by trees and appropriate vegetation, and slowing of water flow via river meanders. In urban areas, water can be further managed through the use of raingardens, SuDs, and ponds in recreational spaces. All of these effects will contribute to flood resilience at a catchment scale in ways that 'hard' defences cannot.

NbS and BGI measures also have multiple additional benefits for nature — by restoring inter-connected habitats — for climate change mitigation — through storage and sequestration of carbon in vegetation and peat — and adaptation — through the natural cooling effect of shading from vegetation and storage of water in months of scarcity. These all positively impact communities, businesses, householders, and individuals, as does provision of green and blue spaces for mental and physical well-being.

It is hoped that a focus on creating flood resilient places will facilitate greater interconnection of water management with other policy areas, such as those relating to climate change, planning, nature recovery, a Just Transition, and sustainable agriculture. If done successfully, this can leverage different sources of funding for the delivery of multiple co-benefits for society and nature, as well as cost-efficiency.

We are not advocating that all funding should go towards NbS and BG infrastructure; hard defences, and even supported relocation of households and communities, will still be necessary in some locations. However, there should be a hierarchy of approaches to water management in urban planning, with a focus on NbS and BGI and their concurrent benefits. Hard defences should be the last line of defence for averting the impacts of the most extreme flood events, and supported relocation a final resort. The more flooding that can be “fixed”, mitigated or reduced and prevented using NbS, the better. Generally NbS tend to be cheaper and more cost effective, meaning that more funding can be retained for the places that need hard engineering solutions.

2. How can decision makers ensure that actions taken to improve flood resilience align with the aims of a Just Transition to achieve a fairer, greener future?

Decision makers can ensure actions taken to improve flood resilience align with the following aim of a Just Transition¹:

Skills training and education that helps to secure good, high value jobs in green industries like low-carbon manufacturing, renewables, and tech:

Placing a greater focus on NbS and BGI for flood resilience could help catalyse a boom in highly skilled and valued green jobs, particularly if flood resilience policy is interlinked with other areas of policy that can contribute to a Just Transition. CIEEM's Green Jobs for Nature² initiative is an excellent resource demonstrating the wide range of careers in the nature-based jobs sector and the routes into a variety of job roles. The Green Jobs for Nature website hosts more than 160 job profiles³ where people working in the sector describe what their role entails, their career pathway and top career tips. There is huge potential in this sector, particularly given the enormity of impending national and international challenges from climate change and biodiversity loss, but also from emerging innovation and opportunities to tackle these. One of the big challenges that ecology and the environmental sector faces is a capacity crisis. Green jobs and opportunities for careers in nature are often invisible to young people, particularly people from currently under-represented backgrounds who could bring their talents, skills and enthusiasm to these roles. The Green Jobs for Nature campaign aims to tackle these challenges by raising the profile of the sector and increasing diversity and inclusion in the sector, which is crucial to a Just Transition.

Building infrastructure, transport and communities that support our efforts to decarbonise, to enhance biodiversity and which are resilient against the impacts of climate change:

NbS and BGI will reduce flooding risk to communities while delivering associated health benefits of having more blue and green spaces, particularly in urban spaces where these can help mitigate the effect of higher temperatures and reduced rainfall by providing shade

¹ <https://www.gov.scot/publications/transition-fairer-greener-scotland/>

² <https://greenjobsfornature.org/>

³ <https://greenjobsfornature.org/job-profile-category/all-job-profiles/>

and more surface water storage. When interconnected with other measures aimed at ensuring equitable access to good quality greenspace throughout towns and cities, BGI can contribute to a network of sustainable and active transport routes, providing a range of public benefits alongside decarbonisation of the transport system.

Making sure the costs do not burden those least able to pay and the benefits of our transition are felt regardless of where you live, who you are and what you do:

Inclusive decision-making is key to ensuring that measures for flood resilience deliver maximum benefits while not burdening those least able to pay, and often the worst affected by climate change and ancillary impacts such as flooding. Communities must be involved in the decision making process before consultation on plans, ideally through co-production of plans. They are experts in their local environment and how it responds to flooding events. Community Councils and other local groups, such as flood response groups, represent a bank of local, long-term, knowledge that should be used and respected by decision makers.

Although communities should be more involved and have more decision-making power, they should not be expected to lead on Flood Resilience. For flood resilience to be effective, it must be implemented at the catchment scale, as well as at the scales of individual communities, businesses, households and individuals. This requires coordination, support and funding from national and local governments.

We understand that there is concern among some communities that relocation will be the only option made available to them; for all communities at risk of flooding, all options should be considered in the process of identifying the most appropriate, regardless of socioeconomic status, and following a hierarchy that considers options for NbS and BGI first, and relocation as a last resort. Where BGI or NbS are not adequate to address the risk from flooding, there must be support to relocate.

Key to maximising the benefits for a Just Transition will be combining a strategy and actions for flood resilience with other related strategies, mutually reinforcing these and making efficient use of resources, including funding (please see our answer to Q16).

- 3. Who do you think has a role in Scotland to help us become more flood resilient and to help us adapt to the impacts of climate change? (Please rank from most to least important)**

- Scottish Government
- Local Authorities
- Land owners/land managers
- Farmers and crofters
- Scottish Water
- Scottish Environment Protection Agency (SEPA)
- House builders/developers
- Businesses
- Community groups
- Homeowners
- Individuals
- Other (please specify)

Everyone on this list has a role to play, and their "rank" will vary from place to place and at different scales.

Main themes

4. What support do communities need to become involved/engaged in climate adaptation and flood resilience planning?

This will vary from place to place, and depend on factors that relate to communities themselves, including their capacity to become involved and engaged. Communities will likely need a range of support from access to funding and expertise, to involvement in the decision-making process, in order to make informed decisions and to understand the range of options available to them. Some communities may have already created local place plans⁴ and this is a key way that communities can input into adaptation and planning issues.

Communities will need to be able to genuinely input into the process, including co-design opportunities, if possible. Some communities will just need to be heard and know that their experience is being factored into any projects. Local Authorities are likely to need support themselves in order to enable this to happen meaningfully.

Some will want to take a bigger role, perhaps even long-term management of schemes, but may need support / training / equipment to be able to undertake that. Access to resources

⁴ <https://www.ourplace.scot/home/local-place-plans>

and funding is likely necessary, particularly for community-led resilience schemes or neighbourhood scale projects (involving NbS).

All of these supports, from inclusive decision making, advice, training and funding can boost confidence and encourage voluntary action.

Farmers are potentially in a position to enact measures with significant benefits for flood resilience, but are also among those in need of well-informed advice and feedback to help them identify the most appropriate suitable options. These can include low and no cost options which benefit their business as well as the wider community. A specific example would be for farmers to sow winter cover crops which increase resilience to flooding and reduce soil erosion by binding the soil and intercepting water that would otherwise rapidly runoff bare fields.

In addition to access to advice and expertise, farmers should be supported financially to deliver measures that increase flood resilience and other benefits, as a fundamental part of the new agricultural payments scheme. This should include financial and other supports that encourage collaboration between farms to deliver more, bigger, better and joined up at the catchment scale. A great scheme that focuses on this is the Integrating Trees Initiative⁵ a farmer-led initiative which aims to encourage more farmers and crofters to plant trees, another key Nature-based solution to increase flood resilience.

5. What should local authorities be doing to ensure meaningful community participation when taking decisions about improving flood resilience?

Communities should be involved in the decision making process before the consultation stage; if possible, a co-design process should be followed, though we recognise this is not always practical or feasible. If not, good communication is vital, as is finding ways for meaningful engagement and input. Some Local Authorities (LAs) may need more resources, training, or access to a trusted intermediary or third party to support meaningful community engagement.

⁵ <https://www.forestry.gov.scot/support-regulations/farm-woodlands/integrating-trees-network>

Key to good communication is openness and transparency — communities want to have a say on their local environment, and will have more detailed local knowledge than many practitioners.

However, decisions may need to be taken that conflict with what they want, for acceptable reasons, so they need to know that. In such cases, it is especially important that the process for arriving at that decision be made transparent, and to clearly communicate what the proposals are and why they are the most appropriate option.

Communities should be encouraged to consider flooding and climate adaptation within their Local Place Plans (LPPs), and not just in places where flooding is currently experienced, but also in light of the climate changes we are going to experience. As stated in our response to the consultation on NPF4, we recognise that the creation of LPPs will involve time and commitment and we would like to see clear mechanisms of support for local communities and recognition of how small quick wins, citizen action and effective communication can lead to their success. Useful strategies for successful community engagement are outlined in the Renfrewshire ‘how to’ guide⁶.

6. What would help communities understand their current and future flood exposure and the range of options available to them to help them become more flood resilient? (Please rank from most to least important)

- Access to flood resilience advice/support
- Access to flood maps showing current and future flood exposure
- Access to information on the range of flood resilience options available for their community
- Access to information on community “self-help” options.
- Access to local flood history
- Other (please specify)

⁶https://www.renfrewshire.gov.uk/media/9367/Local-Place-Plans-How-To-Guide/pdf/Local_Place_Plans_How_To_Guide_SC_final.pdf

Ranking here is again very difficult, as different communities will need different things, depending on their existing capacity and capability, and also their contacts with other support organisations (e.g. some LAs may provide info and data publicly, others might not; some local climate hubs may be providing support on flooding to some communities).

**7. What actions could communities take to improve their flood resilience?
(Please rank from most to least important)**

- Share local knowledge of what happens during floods with organisations like SEPA and local authorities
- Link up with their local climate action group
- Set up a local community flood resilience group
- Develop a local community flood response plan
- **Other (please specify):**

(5) Incorporate flood resilience actions within a Local Place Plan; (6) Take action within their own land / homes / gardens (noting that this is not always possible or feasible, or affordable)

8. What actions could householders/businesses take to improve their flood resilience? (Please rank from most to least important)

- Learn about flood exposure in their area
- Invest in property resilience measures, such as installing flood gates,
- raising electrical wall sockets and using flood resilient building materials
- Join a community flood action group
- Sign up to Floodline for flood alerts and warnings
- Seek advice on flood resilience
- Make sure they have flood insurance

- Other (please specify)

Householders and businesses don't always have control over this, e.g. flood insurance. It's not up to them if they can get it or not, there isn't always a flood action group to join. The only options that we consider appropriate and fair are: (1) Learn about flood exposure in their area; (2) Sign up to Floodline for flood alerts and warnings; (3) Seek advice on flood resilience.

9. What would you do to improve your personal flood resilience? (Please rank by importance)

- Find out how exposed you are to floods
- Sign-up to Floodline for flood alerts and warnings
- Have a personal flood plan ready to put into action when flooding is expected
- Ensure you know what to do if your property was to get flooded
- Check your flood exposure before buying or renting a property
- Make sure you have flood insurance
- Other (please specify)

No comment: as we are a professional body, we are not in a position to comment on this question.

Places

10. How can we ensure that our places are designed to be flood resilient in future?

Interlinking of policies tackling multiple interconnected issues is key to better flood resilience, as well as cost-efficiency and public value (please see our response to Q16). Specific measures relating to design of places could include requiring that every new development have some flood resilience component to it, e.g. a flooding equivalent of the Net Zero test. This should include consideration of future risks from flooding, not just current.

Raingardens should be a widespread feature of urban design for flood prevention, and there should be incentives for retrofitting these into existing buildings.

While Sustainable Urban Drainage Systems (SUDS) are a legal requirement in Scotland for all new development, the policy and legislation related to these needs to be tightened so that they are better considered during the initial site design stage and best practice is followed for their long-term management, ensuring their effectiveness for both water management and biodiversity. Also, when deciding where to position the SUDS, consideration should be given to how SUDS link up with water courses, such as ditches and streams, to deliver ecological networks, allowing the movement of amphibians and other wildlife.

Flood resilience has to be a key consideration in any planning application. Building on flood plains cannot be allowed and the regional impact of new housing developments on catchments has to be considered. Furthermore, Nature-based water management solutions should have more prominence throughout Developing with Nature Guidance

11. To what extent do you agree that there is a need to make space for water to improve the flood resilience of our villages, towns and cities?

- Strongly agree

12. Which of the following do you think would be helpful? (Please rank by importance)

- Increasing the use of sustainable drainage systems
- Creating blue and green drainage networks to enhance existing drainage systems
- Using available greenspace such parks and sports pitches to help soak up and store water in the heaviest rainfall events to prevent drainage systems becoming overwhelmed
- Creating raingardens in public parks and streets
- Other (please specify) All of these measures will be helpful; the more pertinent question is which is the most appropriate measure (whether NbS, BGI, or hard defences) for a particular location and, conversely, where will certain measures be most effective?

13. Which of the following do you think would be helpful? (Please rank by importance)

- Using soil, and land management techniques to slow down the flow of water and increase infiltration and water retention
- Using river and floodplain management techniques such as reintroducing meanders to rivers to slow flow and enhancing floodplains and wetlands to increase storage
- Increasing woodland to help intercept, slow and store water throughout catchment
- Restoring peatlands to absorb, store and release water slowly.
- Enhancing natural dune systems to maintain a natural barrier that reduces the risk of tidal inundation
- Managing saltmarsh and mudflats in estuaries to store water and dissipate wave energy
- **Other (please specify)**

All of these measures will be helpful; put the most appropriate measure (whether NbS, BGI, or hard defences) in places where they will be most effective. Link with ecosystem restoration strategies; restoring fresh and saltwater wetlands, dune systems and river meanders where they had been previously will precipitate multiple benefits for flood resilience, nature, and net zero. In addition to the measures listed, reintroducing extinct keystone species, such as the Beaver, can have a substantial positive impact on flood resilience through the building of dams which slow water flow and store water⁷. While increasing woodland is certainly an effective measure, planting of even a small number of trees can have a significant positive impact.

14. Should moving communities away from areas with the highest exposure be considered as an option? **Yes**

Please give the reason(s) for your answer.

In areas where no other options for flood resilience are feasible, some households or communities will need to be moved, but they must have adequate support to do so. For some it is already impossible to sell homes and move owing to current and near-future

⁷ <https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wat2.1494>

flooding risk making mortgages or insurance prohibitively expensive. Supporting relocation where this is the only option, for example through state purchase of peoples' homes, is fundamental to a Just Transition and will mean that the vacated space can be restored (e.g. as floodplain or estuarine habitat) and contribute to flood resilience in the wider catchment.

Processes

15. How might information, guidance, direction and technical support be provided for communities and flood management organisations?

No comment.

16. How can we improve efficiency, consistency and value in delivering flood actions?

Joining up strategies would be cost effective, using funding allocated to a range of interlinked challenges to address these in a holistic way, using what has already been budgeted for more effectively. There are a number of links and opportunities between the Flood Resilience Strategy and others, including:

- **National Planning Framework 4:** NPF4 outlines several integrated policies and strategies which are intended to contribute to flood resilience while addressing the twin crises of climate change and nature loss. These include promoting sustainable development practices (including BGI), integrating nature-based solutions, and fostering collaboration across sectors, as well as avoidance of flood plains and other areas at high risk of flooding.
- **Scottish National Adaptation Plan (SNAP 3):** The holistic approach of SNAP3 is laudable, but this must be supported by specific SMART targets and actions that demonstrate cross-sector and community engagement.
- **Scotland's Biodiversity Strategy (SBS):** embed and integrate the actions of the SBS across agricultural, forestry, planning, flooding, and infrastructure policies, in order to ensure that these sectors contribute to flood resilience while also supporting biodiversity and climate adaptation goals.
- **River Management Plan 2021-2027:** align water quality targets with this, but focus on additional aspects, specifically nature network actions, riverine tree planting targets, restoring natural flows via the removal of redundant dams and weirs.

- **20 minute neighbourhoods:** integrate BGI and NbS into compact and connected sustainable development that facilitates safe, active travel, and also acts as a nature network (please see our comment on SUDS in Q10).
- **Land Use Strategy:** natural flood management, sustainable land use practices, and integrated planning, are core to the LUSs focus on the integrated nature of land use and a landscape-based approach.
- **Implementation of Regional Land Use Frameworks** by Regional Land Use Partnerships. Land use frameworks can play a key role in facilitating the integration of multiple ecosystem services, and these should be empowered and financed.
- **Agricultural payments schemes:** pay farmers to undertake actions that build flood resilience, including catchment-scale actions by incentivising and supporting collaboration between farms and other land owners.
- **Nature Networks:** A National Nature Network is required to join up sites for nature and link ecological processes across landscapes. An NNN could ensure that nature networks designated by local authorities link across boundaries, make ecological sense, and contribute to flood resilience at the catchment scale. Two good examples are the Clyde Climate Forest and the Glasgow City Region Climate Adaptation Strategy, which encompass eight councils along the catchment of the Clyde (ecological relevant area) and the Central Scotland Green Network.
- **30x30 and OECMs:** 30x30 aligns with broader environmental strategies by protecting and interconnecting natural spaces, bringing additional benefits for flood resilience while simultaneously addressing biodiversity loss and climate change. This is particularly the case where protected areas outwith designated sites meet the IUCN's criteria for Other Effective Area-based Conservation Measures (OECMs), including long-term governance and management arrangements.

Broadening the options for flood resilience could broaden the funding opportunities also. For example, a review / update of the Place-Based Investment Programme (if continued beyond 2025) could include more in the way of flood resilience and adaptation beyond just net-zero as the only climate criteria.

Delivery of all these strategies can be done together, and they will be better and cheaper and more sustainable if they are. However, this requires systems change: all projects, developments, land use changes, etc., need to consider flooding, biodiversity, climate

action. Rather than delivering all these things in a piecemeal fashion with climate adaptation and resilience as a 'nice-to-have', we need to make sure they are incorporated systemically. Traditional methods and business as usual can not continue and are certainly not cost-effective in the long-term.

Furthermore, where perverse subsidies arise from policies these need to be addressed, for example, the Agriculture and Rural Communities (Scotland) Bill and the way that the Flood Risk management (Scotland) Act 2009 is operated.

17. Other than large flood protection schemes, what other flood resilience actions should we focus on supporting/spending available funding on? (Please rank by importance)

- Maintaining existing flood protection
- Small flood protection schemes
- Natural flood management
- Blue and green infrastructure (e.g. multi-purpose green space, such as floodable sports pitches)
- Flood forecasting and warning
- Property level flood resilience measures
- Supporting local community flood resilience groups
- None – all funding should be spent on large flood protection schemes
- **Other (please specify)**

All of these measures will be essential to flood resilience; put the most appropriate measure (whether NbS, BGI, or hard defences) in places where they will be most effective. NbS and BGI have more potential to improve catchment-level flood resilience and therefore will be most effective and cost-efficient at improving flood resilience at all scales. Property level flood resilience measures are only likely to be applicable in urban situations, whilst large natural flood management will be in rural areas. Flood forecasting and warning are essential in places that already flood, or will do soon, and are not needed in places that aren't likely to flood for 10-20 years, so effort should be put into measures that will reduce this likelihood and increase resilience.

18. Do you think there is enough evidence and information to support the delivery of a broader range of flood resilience actions? **No**

If No, please let us know what you think our evidence and information gaps are.

Enough evidence, yes, but there are still gaps in information. All of the actions listed in Q17 are important; what is key is the right action in the right place. For some places, traditional flood protection will be the only viable option, but for many others, natural flood management, including blue-green infrastructure and NbS will deliver both flood resilience and other benefits, including local greenspace and access to nature. We need an improved understanding of where different interventions will be most effective and for these to be prioritised in those areas. This will require expertise, but also involvement of locals and their knowledge of water movement in their spaces.

National Land Use Strategy relevant here?

19. What other funding sources or mechanisms could be used to support flood resilience? (Please rank by importance)

- Support natural flood management through payments to farmers, crofters and land managers (for example, Forestry Grant Scheme, the future agricultural support framework or PeatlandACTION payments)
- All new development makes a contribution to improving flood resilience
- Financial contributions from those who directly benefit from improved flood resilience (e.g. private sector/businesses)

○ **Other (please specify)**

All of these are important and should be part of a wider endeavour to better interlink policies and associated funding. Additional options include leveraging funding from new developments to address any flood risk associated with that development, and; inclusion of flood resilience and adaptation within criteria for Government funding schemes, such as the Place-Based Investment Programme, schools estate funding, transport funding, etc.

20. What is your main concern about flooding?

Avoidable impacts from flooding will continue and worsen unless there is an interlinked, systemic approach to addressing the multiple interrelated impacts facing communities from climate change and biodiversity loss.

21. What one thing would do the most to improve Scotland's flood resilience?

A strategy for flood resilience that interconnects the multiple strategies focused on the wide range of challenges we face, including halting and reversing the loss of nature and biodiversity, climate change, social inequality, health and access to greenspaces. An effective flood resilience strategy should outline all the options for flood resilience, with guidance on how to determine which is the most appropriate for any particular area, bearing in mind these multiple challenges. No single measure is most important; they should all be considered as a suite of measures, with locals involved in determining what is most appropriate for their area, with the support of experts.