Interreg North Sea Region Building with Nature
European Regional Development Fund
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Policy Brief
Scotland
Coast

Raising awareness and investing in our natural defences

A coastal Policy Brief from the Interreg North Sea Region Building with Nature project by the Dynamic Coast Project

Key messages

Scotland is well placed to increase the uptake of Building with Nature (BwN) approaches (Natural Flood Management in Scotland) as part of renewed efforts to maintain resilience, though targeted changes are required within the public and private sectors to realise this opportunity. The following aspects require consideration,
leadership and support:

1. Greater recognition of the importance of our existing natural defences, how these contribute to managing change in the future and how they could be enhanced;
2. Improved leadership within Government, public sector and partners in a collaborative approach (both in terms of policy, data and on-the-ground implementation);
3. Greater awareness and access to financial support to ensure BwN is available (for erosion as well as flooding) as part of an adaptive toolkit for planning and resilience.

Sense of Urgency

The raised sea surface level during periodic storms provide an insight into our climate-change future. In January 2020, the surge resulting from the low atmospheric pressure of Storm Brendan raised the sea surface by approximately 0.9m, allowing the coincident storm waves to cause erosion and flooding across many areas. Some of our climate projections anticipate sea level to be raised by a comparable amount by 2090. Whilst Storm Brendan was classified as a 1:15 year event, higher sea level (through surges or mean sea level increases) will enable smaller more frequent storms to reach further up our shoreline with greater associated erosion and flood risk.

Introduction and context

At 21,000 km, the Scottish coast is long and varied. Only 19% (3,802 km) is potentially erodible (or 'soft') and 3% (591 km) is artificial, but the distribution of built assets tends to be clustered within these soft and artificial coasts. It is important to recognise that our natural defences (beaches, dunes and marshes) protect 80% of the £18bn of coastal assets in Scotland, with only 20% protected by artificial defences. **Thus, the existing situation in Scotland exemplifies the importance of natural defences and BwN approaches, even though these are often under-recognised and under-valued by the public and some professionals.**

The importance of governance is key to the delivery of the Interreg BwN project. Each of the European partner organisations has policy obligations and policy frameworks for their own shorelines. Underlying these are institutional and cultural 'memories' that produce a spectrum of governance arrangements: in the Netherlands, the wide-scale loss of life and destruction in 1953 resulted in centralised state ownership and resourcing of coast protection. Other countries have a more devolved approach. Scotland, and others, lie at the other end of this spectrum where national policies are set and financed, but are implemented by regional government (local authorities). Such a devolved approach has direct implications for the uptake of BwN approaches.

The Flood Risk Management (Scotland) Act 2009 (FRM Act) does not explicitly include reference to coastal erosion, which is covered by separate but dated legislation (Coastal Protection Act 1949) that predates concerns over climate change and sea level. Like Denmark, the responsibility of coastal erosion protection lies with the land-owner, unless broader public benefits can justify state-funded intervention. However, the response in these cases is limited since central government funding has been directed towards flood protection rather than erosion protection and local authority budgets are under great pressure from conflicting demands. Nevertheless, whilst Scotland and the Scottish coast is well suited to greater use of BwN, the implementation of policy needs a more streamlined coordinated effort in terms of alignment, data capture, monitoring and delivery on the ground.

Challenges

The EU-level policy brief considered three gaps, including a Capacity Gap: limited understanding and appreciation of local context, an Accountability Gap: lack of evidence base and instruments to effectively exchange experiences and a Financing Gap: or list of bankable project and business cases. Whilst we welcome and recognise these, from a Scottish perspective the capacity gap might include the evidence base, allowing accountability to consider policy and inter-organisational issues.

Capacity Gap – There is a lack of awareness of the existing role of natural defences in the protection of assets from coastal flooding and erosion in Scotland. Consequently, there is insufficient understanding of the resilience or susceptibility of existing features both to future climate change and development pressure. This hampers the ability of partners to target effort in a strategic and coordinated manner.

Accountability Gap – National policies are in place but coordination and implementation needs to be enhanced. There has been mixed progress to date mapping NFM coastal features, as well as limited progress to include coastal erosion as a key consideration in flood risk; though improvements are anticipated. More recent integrated approaches provide opportunities to improve matters through the Scottish Climate Change Adaptation Programme 2 and collaborative working. However, organisational inertia remains a concern.

Financing Gap - The Scottish Government provides substantial and long-term capital grant for flood risk management, which includes coastal flooding. The £42m annually over 10 years to 2026 is allocated according to the priorities identified in the Local Flood Risk Management Plans (LFRMP) and Strategies. Following an agreement with COSLA (Convention of Scottish Local Authorities) erosion

protection works are not considered; so if local authorities undertake coast protection works, this must be funded from their general capital grant in competition with other demands. Where there is an overlap with coastal flood risk and the works are included in a LFRMP, capital monies may be available.

BwN projects typically require ongoing maintenance, not unlike civil engineering schemes, though Local Authorities are often less experienced in these. Flexibility between capital and maintenance funding may also be required.

Opportunities

It is acknowledged that the gaps in capacity, accountability and financing overlap are interrelated. For example, the implementation (the "what to do where") is linked to Accountability ("who leads and helps") and Financing ("who pays and supports").

Capacity Gap – Greater awareness of the current protection provided by natural features is critical to BwN uptake: the Dynamic Coast project provides a national evidence base for Scotland and the NFM network provides a good foundation (www.nfm.scot). However, these could be improved with further Scottish, UK and EU partner exemplars to showcase the broader use and efficacy of BwN techniques. Efforts to enhance our capacity should be top-down and bottom-up to better include local partners.

Accountability Gap – Coastal erosion, flooding and climate change are shared problems, and Scotland now has coordinated programmes across Government (Scottish Climate Change Adaptation Programme 2 (2019). We are becoming better at collaborating across the public sector and learning from domestic and international partners.

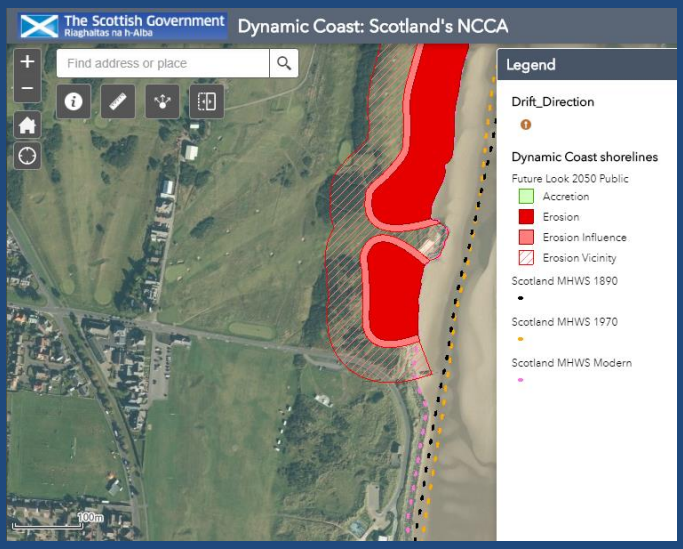
Despite organisational inertia, successful projects are delivering enhancements which break down established and silo thinking, though more needs to be done (SEPA's review of the NFM maps is a positive example).

Shoreline Management Plans should be available and updated on all coasts where assets are at risk, allowing linkages across to Flood Risk Management Strategies. Alongside this the Dynamic Coast project recommended appointment of coast champions within organisations to invigorate the coastal agenda internally, an approach consistent with the Committee on Climate Change which recommended a senior owner to lead and report back to ensure the delivery of SCCAP activities both internally and with partner organisations.

Financing Gap – BwN techniques must be explicitly considered for scoping of local authority flood studies, however uptake is limited. 20% of the £42m/yr funding (£8m/yr) is set aside for flood studies and NFM works, but local authorities have necessarily prioritised development of flood studies over the implementation of NFM thus far. Although climate mitigation activities are progressing well in Scotland, climate adaptation actions are rare, yet the international and national policy obligations are clear on the requirement of both: the 2016 Paris Agreement identifies the need that 'Making finance flows consistent with a pathway towards… climate resilient development' is required. Thus, greater awareness of the efficacy of, and available funding for BwN /NFM schemes may assist in 'getting beyond the pilot stage'.

Given the scale of challenges anticipated over the coming decades it is highly likely that a spectrum of management options (including traditional engineering, BwN and hybrid approaches) will be required in the adaptation and protection toolkit.

DynamicCoast.com is a public evidence base of coastal changes across Scotland's erodible shores, demonstrating the vital contribution natural coastal defences play in protecting coastal infrastructure, buildings, businesses and communities.



National Flood Risk Management Network is funded by the Scottish Government and aims to share knowledge and best practice amongst people working with NFM. Case studies and guidance is available at www.nfm.scot

Key policy recommendations

1. Awareness raising at international -, national-, local government and local partner levels of BwN INTERREG laboratories, NFM Network and Dynamic Coast outcomes.
2. Roadmap the pathways of international, national and local policy hierarchies, partnerships and stakeholders to improve coordination and delivery.
3. Coordinate key datasets to identify existing and anticipated resilience / susceptibility of natural defences and consider opportunities for enhancements. Set up a shared monitoring campaign to ensure single authoritative national shared resource.
4. Consider supplementary funding mechanisms to enhance uptake of BwN and address the Climate Adaptation implementation shortfall.

Image captions & credits:

1. Coastal practitioners sharing BwN experience (J. Fitton)
2. Storm Brendan (2020.01.13) Ardrishaig (D. Bowness)
3. Salt marsh planting at Eden Estuary (C. Maynard)
4. Extract from Dynamic Coast showing coastal change.
5. Dune reinstatement, St Andrews (S. Reid)
6. Dune reinstatement, St Andrews (A. Rennie)

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- www.DynamicCoast.com
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