



The governance challenges & opportunities of working with nature to protect against floods and coastal erosion

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Littoral landscapes

The interface between well-being and risk



A declared climate emergency



245,000 properties are at risk of flooding from rivers, the sea and surface water



2,700km of coastline with Ca. 400 properties at risk of coastal erosion



Sea level rise – 0.27m and 0.69m for Cardiff under a medium emissions by 2100

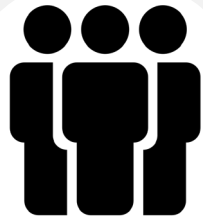
Working with nature

Saltmarshes can act as a natural form of protection against floods and coastal erosion

- Acceptance that it is not always possible to invest in flood defences in all at-risk locations
- Increasing emphasis on nature-based solutions – to help unlock multiple benefits (ecosystem services)
- Saltmarshes are a natural line of defence
- However, saltmarshes are threatened by sea level rise and ‘coastal squeeze’
- To maximise the protective benefits of saltmarshes, there is a need to make space for existing saltmarshes to migrate landward, or to restore or create new saltmarshes. However, the creation or expansion of saltmarshes can also be a source of conflict.
- **Effective governance and policy instruments are needed to navigate this process.**



A governance perspective



Actors



Discourses



Rules

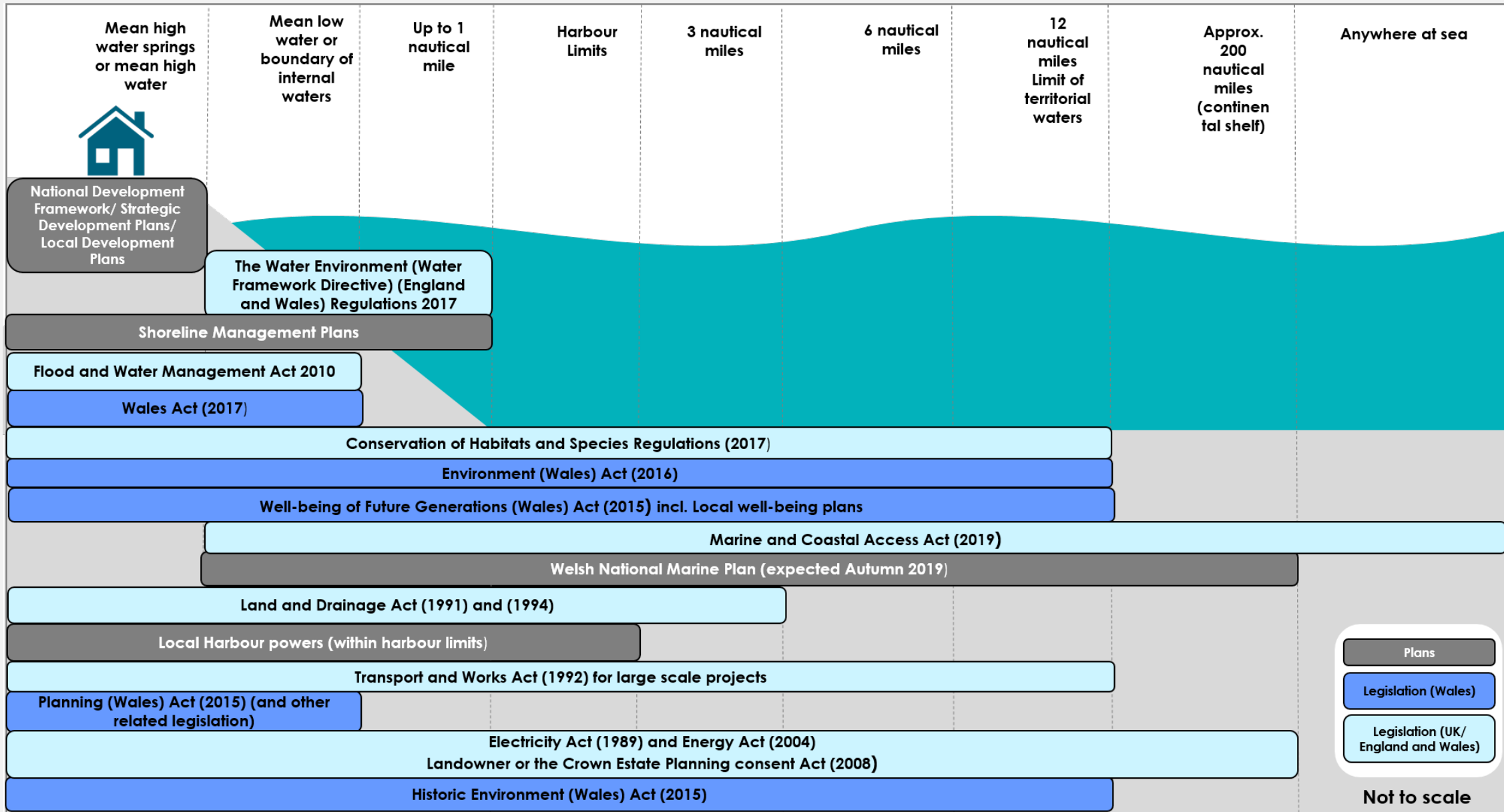


Resources

Governance refers to the interaction between different types of actors (e.g. government and public bodies, private sector and civil society), 'rules' (e.g. legislation and policy) and resources, that influence the decision-making process and the ability to deliver a specific goal.

Research question - To what extent do existing governance mechanisms support, or conversely constrain, the expansion of saltmarsh habitat, to promote natural flood and coastal erosion protection in Wales?

A governance perspective



Methods



Interviews



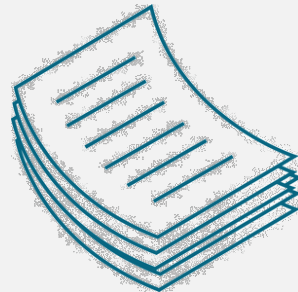
47 interviews



60+ hours of recordings



Document analysis



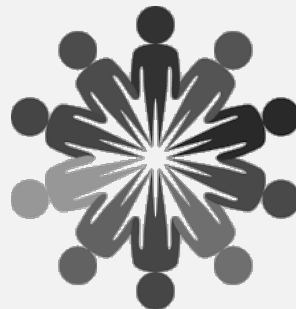
200+ documents



Analysed for key themes



Stakeholder workshop



19 stakeholders at final workshop

Wider research

- This was part of a wider study into Flood & Coastal Erosion Risk Management in Wales
- Strengths & weaknesses
- Opportunities & challenges for aligning FCERM with the national well-being goals to ensure the well-being of future generations

Aligning Flood & Coastal Erosion Risk Management and Well-being in Wales

An analysis and evaluation of FCERM governance

Meghan Alexander, Emma McKinley & Rhoda Ballinger
Cardiff University, UK

November 2019

CoastWEB - Valuing the contribution that coasts make to human health and well-being, with a focus on the alleviation of natural hazards and extreme events

CoastWEB An analysis & evaluation of Flood & Coastal Erosion Risk Management and Well-being in Wales
Summary of Research Findings

Context
An estimated 245,000 properties are currently at risk of fluvial, coastal and surface water flooding in Wales, with coastal erosion affecting a further 400 properties along the Welsh coastline. These risks will be exacerbated in the future by climate change and sea level rise. This presents both challenges and opportunities for delivering the aspirations of the *Well-being of Future Generations (Wales) Act 2015* and the national well-being goals.

Research methods
Examining the relationship between Flood & Coastal Erosion Risk Management (FCERM) and well-being, this research highlights the strengths and weaknesses in current FCERM governance, while identifying the synergies and conflicts between FCERM and the national well-being goals. The research draws from in-depth policy and legal analysis of approximately 200 documents, as well as 47 interviews with policymakers and practitioners operating at national and local scales. The findings were further validated through a stakeholder workshop in July 2019.

Key strengths (+) and Weaknesses (-) in FCERM governance

Strategic direction
+ Holistic, diversified risk-based approach is reinforced in national policy and is key for societal resilience;
+ Discursive strength and growing expectations towards multi-beneficial initiatives;
- Adaptation is not specified as a strategic objective in the revised National FCERM Strategy;
- National FCERM strategy lacks ambition;
- Absence of explicit well-being objectives and limited perspective on well-being goals in the National FCERM Strategy.

Ecosystem resilience
+ *Environment (Wales) Act 2016* mandates Sustainable Management of Natural Resources (SMNR), with strong compatibility with FCERM objectives;
+ Area statements could facilitate SMNR and collaborative working;
+ Natural Flood Management (NFM) must be short-listed for FCERM schemes;
+ National Habitat Creation Programme (NHCP) provides compensatory habitats for FCERM schemes;
- Slow delivery of NHCP due to challenges including multiple land/asset owners, misaligned planning cycles and legal duties (related to care and Public Rights of Way);
- Expensive to realign and decommission existing assets for compensatory habitats.

Coastal adaptation
+ Long-term planning policies outlined through Shoreline Management Plans (SMP2) and new requirement on Coastal Groups to report on action plan progress;
+ Newly established Wales Coastal Monitoring Centre (funded until 2022) to support evidence-based decisions;
+ Examples of frameworks for navigating adaptation processes (e.g. Fairbourne and Newgale), which actively involve communities and adopt long planning horizons;
- Lack of governance mechanisms/policy instruments to enable adaptation, with calls for strategic support from Government;
- "Adaptation gap" in FCERM funding and budget silos;
- Non-statutory status of SMP2 conflicts with Highways legislation and duties to maintain Public Rights of Way;
- "Difficult conversations" demand proactive, *sustained* and *meaningful* engagement (not consultation), that places communities at the heart of decision-making.

Funding
+ Medium-term capital commitments in FCERM programme and CRMP to support longer-term planning and efficiency savings;
- Funding is primarily allocated to protect people and property which is ill-suited to adaptation schemes, leaving an 'adaptation gap';
- Wider benefits and well-being contributions receive lowest weighting in scoring criteria for funding;
- Shortfall in revenue funding to support wide range of FCERM activities.

National well-being goals

(as outlined in the Well-being of Future Generations (Wales) Act 2015)



Prosperity



Resilience



Equity



Health



Cohesive communities



Culture & language



Global responsibility



Making space for saltmarsh
Enabling mechanisms, gaps & barriers

Enabling governance mechanisms

Some examples

- **Shoreline Management Plans** provide a long-term strategic vision for the coast over the next 100 years, with requirements for decision-makers in spatial and marine planning to have regard to these plans;
- Legal requirement to demonstrate the **Five Ways of Working** – taking a long-term perspective, preventative, integrated and collaborative approach, and promoting stakeholder involvement;
- Cohesive national policy around the **Sustainable Management of Natural Resources** (SMNR);
- **Area Statements** (as required by the Environment (Wales) Act 2016) will provide a valuable local evidence-base as well as a key governance mechanism to facilitate SMNR;
- **National Habitat Creation Programme** provides a strategic approach to the identification and creation of compensatory habitats to offset coastal habitat losses associated with the implementation of SMP and flood defences;
- Wales Coastal Monitoring Centre funded until 2022 to monitor coastal change;



Governance gaps & barriers

➤ Realigning coastal communities

- **Implementation gap** - no clear governance mechanisms & lack of strategic guidance;
- **Funding** criteria in the FCERM budget are focused on the protection of people and property, which favours traditional defence-based schemes. Moreover, budget silos mean adaptation schemes often fall through the gap;
- Lack of **awareness** of SMPs;
- “**Difficult conversations**” with coastal communities require honest communication and *meaningful* engagement;

➤ Realigning critical infrastructure

- It is incredibly expensive to decommission and realign existing assets;
- Network Rail are funded to *maintain* existing rail infrastructure (not to enhance); moreover, this matter is not devolved to Wales but resides with UK Government;
- Legal **duties of care** and duties to maintain **public rights of way** are often prohibitive;

➤ **Negotiating across multiple land and asset owners, with different priorities, remits and (mis-aligned) planning cycles is time-intensive!**



Recommendations

- Strengthening strategic policy around coastal adaptation, with a greater sense of urgency;
- Broadening funding criteria;
- Bridging current departmental silos and promoting cross-sectoral funding.
- Raising the profile of Shoreline Management Plans (SMP2) amongst a broader remit of stakeholders to better embed shoreline management in strategic planning at the land-sea interface;
- Addressing research gaps around governance mechanisms and intangible benefits
- Processes for aligning Highways legislation with adaptation requirements;
- Initiating 'difficult conversations' and actively engaging communities and other stakeholders (supported by sufficient resources);
- Embedding notions of "Just transitions";
- Greater involvement from Network Rail;
- Continued proactive engagement with landowners/service providers to identify potential sites for compensatory habitat early on, alongside promotion of exception clauses within the National Habitat Creation Programme;

MAKING SPACE FOR SALTMARSHES

The challenges and opportunities of working with nature to protect against floods and coastal erosion: A governance perspective

Research

Key research questions:

To what extent do existing governance mechanisms support, or conversely constrain, the expansion of saltmarsh habitat, to promote natural flood and coastal erosion protection in Wales?

Our research methods:

INTERVIEWS



47 interviews lasting from 1 to 2.5 hours



60 hours of recordings

DOCUMENT ANALYSIS



Interviews transcribed and analysed



200 documents examined

STAKEHOLDER WORKSHOP



Stakeholders attended a workshop to validate research findings



Range of activities for future research, post a review of literature, strengths and weaknesses in FCRM governance



Working with Nature Saltmarshes as a form of natural protection from floods and coastal erosion

• We cannot fully prevent floods from occurring and it would be unsustainable to invest in flood defences in all at-risk locations. Instead, we need to take a diversified approach to Flood & Coastal Erosion Risk Management (FCERM) to manage risk in a holistic way.

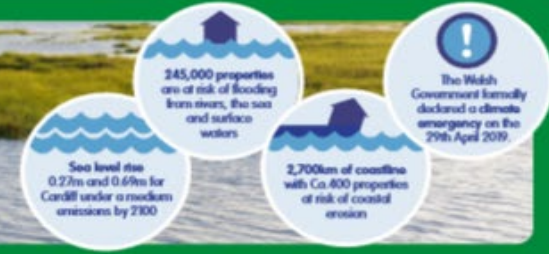
• One approach is to work with nature and natural processes to help mitigate coastal hazards. Saltmarshes in particular act as a natural buffer against flooding and coastal erosion, by reducing the energy and height of waves. Saltmarshes can also work in tandem with defences, under certain conditions, it is estimated that an 100m width of saltmarsh can reduce the height of the defences required from 12m to 8m, resulting in capital cost savings of £2,600-4,600 per metre of seawall (ASC, 2016). Overall, it is estimated that coastal wetlands in the UK provide £154m annually in flood and erosion regulation benefits (Botterwell et al., 2018).

• Saltmarshes hug 78% of the Welsh coastline, but are threatened by sea level rise and the effects of coastal squeeze – this is when hard structures (such as flood defences) restrict the ability of saltmarshes to naturally move landward in response to sea level rise, ultimately resulting in habitat loss. The loss of saltmarsh habitat means there will be a loss of natural flood protection.

• In order to maximise the protective benefits of saltmarshes, there is a need to make space for existing saltmarshes to migrate landward, or to restore or create new saltmarshes. However, although saltmarshes provide a wide range of benefits, the creation or expansion of saltmarshes can also be a source of conflict. Changing the status quo and existing land use is never easy. Effective governance and policy instruments are needed to navigate this process.



Littoral Landscapes The interface between well-being and risk



Making space for saltmarshes A governance perspective

ENABLING GOVERNANCE MECHANISMS

- **Shoreline Management Plans (SMP)** provide a long-term strategic vision for the coast over the next 100 years, with requirements for decision-makers in spatial and marine planning to have regard to these plans.
- **Legal requirement to demonstrate the Five Ways of Working** – taking a long-term perspective, preventative, integrated and collaborative approach, and promoting stakeholder involvement.
- **Cohesive national policy** around the Sustainable Management of Natural Resources (SMNR) and working with natural processes.
- **Area Statements** (as required by the Environment (Wales) Act 2016) will provide a valuable local evidence-base as well as a key governance mechanism to facilitate SMNR.
- **National Habitat Creation Programme** provides a strategic approach to the identification and creation of compensatory habitats to offset coastal habitat losses associated with the implementation of SMP and flood defences.
- **Wales Coastal Monitoring Centre** funded until 2022 to monitor coastal change.

GOVERNANCE GAPS AND BARRIERS:

- **Realigning coastal communities:** There are certain communities where the preferred policy is one of Managed Realignment – this means that maintenance of existing flood defences will be withdrawn and defences themselves may be decommissioned. Nowhere has received more attention than the village of Fairbourne (Gwynedd, North Wales), which will be subject to decommissioning in ca. 2054 – this will involve the relocation of the people, property and businesses, and eventual restoration of saltmarshes where the village currently stands (pictured). However, there are a number of governance gaps and barriers that currently restrict coastal adaptation.
- There are no clear governance mechanisms for implementing coastal adaptation.
- Funding criteria in the FCERM budget are focused on the protection of people and property, which favours traditional defence-based schemes. Moreover, budget silos mean adaptation schemes often fall through the gap – this means that adaptation schemes in Wales are currently in limbo.
- A lack of strategic guidance.
- Lack of awareness of Shoreline Management Plans amongst those outside FCERM.
- “Difficult conversations” need to be had with coastal communities, which require honest communication and meaningful engagement (as opposed to traditional forms of consultation). Moreover, politics can sometimes get in the way.
- There is a need to shift societal expectations and increase acceptance that defences are not always possible.
- **Realigning critical infrastructure:**
 - It is incredibly expensive to decommission and redesign existing assets.
 - Network Rail are tasked to maintain existing rail infrastructure and to enhance, moreover, this matter is not devolved to Wales but remains with UK Government.
 - Legal duties of care are required to maintain public rights of way over other priorities.
- **Negotiating across multiple land and coast owners,** with different priorities, needs and planning cycles is time-intensive



Recommendations For governance change

1. There is a need for urgent action in the current climate emergency. Welsh Government should strengthen its strategic policy around coastal adaptation and display a greater sense of urgency when developing and implementing adaptation planning.
2. To address the current “adaptation gap” in funding, there is a need to re-think how funding is prioritised within the FCERM funding – to embrace the wider social, economic and environmental challenges associated with adaptation, including less tangible benefits of alternative approaches.
3. Efforts must be made to bridge current departmental silos and unlock opportunities for cross-departmental and cross-sectoral funding.
4. There is a need to raise the profile of Shoreline Management Plans (SMPs) amongst a broader range of stakeholders operating at national to local scales, in order to better embed shoreline management in strategic planning of the land-sea interface.
5. Further research is required into innovative governance mechanisms for enabling adaptation (e.g. looking across FCERM, spatial planning, building regulations and insurance sectors for example), alongside critical questions about who should pay.
6. Aligning Public Rights of Way and Highways legislation with coastal adaptation requirements is essential.
7. Difficult conversations need to be taking place today. There is a moral responsibility to actively engage communities and other stakeholders now about the future of their coastline. Community engagement requires a sustained dialogues, supported by sufficient resources and training of staff on the ground.
8. “Just transitions” are vital. There is a need to better embed the principles of justice within adaptation discourse in FCERM.
9. Network Rail should conduct a strategic assessment of the Wales Route to identify vulnerable infrastructure and should be actively involved in Coastal Groups and Public Service Boards to ensure the well-being implications, and impact to other services, are understood. At the UK scale, there is a need for a high-level debate about the merit of Network Rail funding and its strategic consideration of climate change adaptation.
10. Continued proactive engagement with landowners and service providers is required to identify potential sites for compensatory habitat early on, alongside promotion of exception clauses for existing non-risk Management Authorities to participate in the National Habitat Creation Programme.



Research Team

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Come and talk to us ...
Diolch