Department for Environment Food & Rural Affairs

Llywodraeth Cymru Welsh Government

Cyfoeth Naturiol Cymru Natural Resources Wales

Environment Agency

Flood and Coastal Erosion Risk Management Research Programme

Evidence to support an adaptive approach to flood and coastal risk management

Project summary FRS19221/S

This project provides evidence on how adaptive approaches can be used to help design and apply effective flood and coastal risk management strategies.

Context

The Environment Agency's flood and coastal erosion risk management (FCERM) strategy for England sets out the vision for managing flood risk in the future. One of its core ambitions is to take a dynamic approach to risk management, known as an 'adaptive approach', planning for a range of future scenarios in climate, growth and other uncertainties so the capacity to adapt is built in to investment and strategies. A world leading example of a live adaptive plan in action is the Thames Estuary 2100 Plan.

Adaptive pathways (also known as adaptation pathways) are ways to develop a long term climate adaptation plan for a place, often to the end of the century or beyond. They present the range of options over time that could be taken to anticipate and respond effectively to a range of possible future climate scenarios. When specific thresholds are met (through regular monitoring), a pathway is chosen to determine the appropriate adaptive action.

Method

The project carried out a rapid evidence assessment of academic and non-academic literature, liaised with interested groups, and gained expert insights to understand current knowledge of adaptive approaches.

Key findings

The literature review found the following:

- Adaptive plans can range from simple to complex, according to resource availability and funding arrangements.
- Adaptive pathways are the most effective tool for creating adaptive plans over time. They can deal with uncertainty and risk management over long-term planning timescales.
- Future uncertainty is the main barrier to implementation. Adaptive pathways address this through flexibility, transparency, contingency planning and monitoring.
- Success is increased by establishing suitable governance and getting commitment from stakeholders.
- Adaptive pathways are being applied in flood and coastal erosion risk management in several places, including the Thames Estuary and Somerset.

Monitoring is critical to the success of adaptive plans. Challenges can include a lack of guidance, funding or confusion over responsibilities for monitoring and these need to be considered when developing the plan.

The literature highlights stakeholder engagement is needed to change behaviours and attitudes to dealing with risk over an uncertain future. Key stakeholders should be identified at the start of the project and active engagement with them to gain their buy-in should be included within the plan development.

The success of adaptive planning depends on budget, governance procedures and technical knowledge. These factors apply to all adaptive plan projects from large-scale, national projects to smaller, local-scale projects. Once these factors are in place, the details of a suitable approach can be determined.

Recommendations

For policy makers to successfully support adaptive plans with adaptation pathways they should:

- provide a clear, long-term strategic vision that includes governance procedures and financial backing
- provide appropriate guidance to help overcome funding and resource barriers.

Practitioners should consider the following when using adaptive pathways to create adaptive plans:

- consider a range of future scenarios to plan for things that can change, like climate. This should include uncertain risks like extreme climate scenarios
- involve interested groups in determining and reviewing future scenarios and how they determine future pathways to implementing FCERM
- ensure the project plan can adapt and respond to future changes in climate and support investment
- establish clear baseline conditions to support future decision making and a periodic review
- develop detailed plans with clear roles and responsibilities, funding, monitoring and engagement plans.

Next steps

We will monitor how adaptive pathways are used within FCERM to create adaptive plans. We will capture case studies and information that can be shared, and feed this learning into guidance and cross-business working.

This summary is reported in detail in the following output:

Report: FRS19221/R Literature review on an adaptive approach to flood and coastal erosion risk management

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