

Coastal erosion management at Inch Beach, Co. Kerry - IE

1. Policy Objective & Theme

- ADAPTATION TO RISK: Preventing and managing natural hazards and technological (human-made) hazards
- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment

2. Key Approaches

- Integration
- Socio-economic
- Technical

3. Experiences that can be exchanged

This partnership approach between a local planning authority and a university research centre allows tailored studies to be carried out on Inch beach for the local authority, Kerry County Council. The Council will in turn use this evidence to make more sustainable erosion management decisions.

4. Overview of the case

Inch beach, on Ireland's south-west coast, is part of a large barrier dune system subject to high magnitude storm events which in recent years has led to beach erosion and collapse of the adjoining road infrastructure. The responsible planning authority, Kerry County Council, is working with the Coastal & Marine Resources Centre in University College Cork to develop and test guidelines for sustainable erosion management based on scientific evidence and practical experience.

5. Context and Objectives

a) Context

Inch beach is located in Dingle Bay in Co. Kerry on Ireland's south-west coast. It is a large barrier dune system prone to high magnitude storm events which control the system. Previous research has indicated that such events operate on approximately a 60-year storm cycle basis and have been instrumental in controlling the system over the last 200-500 years. The beach is located just off a main coastal road which, as a key tourist route, is vital to the economies of the local and regional areas. The beach itself is 5.5 kilometres long and is a popular recreational resource with tourists and locals. Surfing is a popular activity at the site. In recent years there has been steady erosion of the site. Erosion had caused parts of the road to collapse on various occasions putting lives at risk and damaging local tourism. At such times, 'emergency works' were effectively forced upon, and carried out by, the Council. Because of their emergency nature, remedial action was executed in the absence of any previous monitoring of the site. The Council, however, does not receive dedicated funds for coastal protection works and in recent years has been forced to borrow money to rebuild the road.

b) Objectives

The main issues of concern were protection of the road infrastructure and safety of life. Therefore, a key objective was to institutionalise a new framework for erosion management based on the concepts of coastal resilience, favourable sediment status, strategic sediment reservoirs and coastal sediment cells. Another objective of the Council is to implement site specific

management policies to ensure that erosion is not initiated or aggravated by the impact of human activity.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The local authority, Kerry County Council, is responsible for road building and repair and is de facto coastal manager for the site. Work is carried out on a partnership basis between local engineers in Kerry County Council and staff in the Coastal & Marine Resources Centre, University College Cork. While the engineers act on behalf of the local authority, Kerry County Council, they are also obliged to consult with engineers from the relevant central Government department.

b) ICZM tools

In the case of Inch, physical information is largely absent as there is no obligation to monitor Irish beaches. Through partnership with the CMRC, a number of topographic surveys were carried out both before and after storm events. This was added to existing historical data in order to simulate storm episodes at the site. Results confirm that the site is subject to cyclical erosion processes. At the local site level therefore the challenge is to incorporate baseline physical monitoring into erosion management. This represents a move away from direct intervention, the current management approach. There is no overarching strategy for coastal erosion management in Co. Kerry. However, all local authorities are legally required to prepare County Development Plans. In Kerry, the County Development Plan recognises that the coast “requires special attention and management to ensure its long term sustainable use”. The Council wishes to define a Coastal Development Zone where development will be prohibited, for example, where it could not be adequately safeguarded over its lifetime without the construction of coastal defences or where existing coastal defences, properly maintained, would not provide an acceptable standard of safety over the lifetime of the development. Coastal protection works which have not been the subject of a “recognised design process and have not been assessed in terms of their likely impact on the marine environment” are also prohibited under the County Development Plan.

All County Development Plans legally require a specified period for public consultation. This presents an opportunity for the general public and other stakeholders to get involved in the process. As the Development Plan relates only to the terrestrial environment however, traditionally, inclusion of specific coastal management and/or protection objectives have been largely absent. This has been exacerbated by the strong land-sea divide in Irish coastal management. A GIS database was compiled, with historical and new data from survey work carried out in the initial stages of the project. This database can be regularly updated and expanded as new data becomes available. It is anticipated that through time this will enable more sustainable erosion management decisions to be made as there will be a solid information base.

7. Cost and resources

No information is available.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

Traditionally studies on coastal erosion in Kerry were commissioned by the Council and usually carried out by consulting engineering firms. This effectively meant that no changes could be made to the process surrounding erosion management decision-making. The consultancy exercise usually provided justification for intervention in the form of hard engineering works. The partnership approach adopted here facilitated on-going survey work which in turn has allowed a baseline dataset to be developed. Such localised datasets are virtually unknown in Irish coastal erosion management given the lack of a strategic obligation to monitor.

9. Success and Fail factors

The technical methodology proposed by the over-arching project team would deliver a number of the principles of good ICZM and could fundamentally change approaches to erosion management at the site level. In Kerry, and elsewhere in Ireland, this

is curtailed by the fact that there is no standardised regime for implementing coastal protection works resulting in ad hoc approaches. The strong local involvement in erosion management in Kerry along with a relatively flexible decision-making process could be argued as an advantage of the Irish approach. The lack of a prescribed management regime effectively results in defence works being viewed as the only option available. If resources were available, this could lead to all soft coastlines having hard protection works. This could be a uniquely Irish situation in that those usually responsible for protecting against erosion are doing so with a remit to protect infrastructure not provide sustainable coastal management.

10. Unforeseen outcomes

Where erosion is perceived as a problem by local residents there is little or no mechanism for a Local Authority not to implement protection works. In this case study, as new information became available it was analysed and compared with historic data. This confirmed that the erosion occurring at the site was part of a natural cycle. This, in turn, makes a strong case for monitoring to become part of a local authority's role in coastal erosion management. The obvious problem in this regard is one of resources both in terms of personnel and financial.

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13. Sources

- Kerry County Council. 2003. Kerry County Development Plan 2003-2009. Kerry County Council, Tralee, Co. Kerry, Ireland.
- O'Connor, M.C., Lymbery, G., Cooper, J.A.G., Gault, J. and McKenna, J. 2009. Practice versus policy-led coastal defence management. Marine Policy, doi:10.1016/j.marpol.2009.03.007

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