

6. Integrated Management of Estuaries and Sea loughs

Estuaries are complex systems from ecological and human utilisation perspectives. They face a diverse range of pressures but equally, they present a diverse range of possibilities for exploitation. Achieving a sustainable balance between exploitation and conservation of the resource is a recurring challenge for resource managers.

The management of estuaries is complex for several reasons

- a) Estuaries span the land-sea divide. Many institutions end their jurisdiction at the land-sea interface. These bodies may have differing policies and agendas to those operating on the adjacent land/sea area.
- b) River and catchment inputs can substantially influence estuarine ecology. Mechanisms for the regulation of catchment-derived inputs to estuaries are not well developed
- c) Like most environments, estuary use is regulated at several levels of administration (local, national, international). The goals and mechanisms for achievement of goals may differ and even conflict at different levels of the hierarchy
- d) A diverse range of actual and potential forms of human exploitation exists on estuarine resources. Regulation and promotion of each of these is often the responsibility of a single organisation or group of organisations. Mechanisms for interchange of opinion and integration of planning are often weak or non-existent.
- e) Resource users often relate more closely within their sector than to other types of user in the same geographical location
- f) Estuaries often form the boundary between administrative units. Many regional, subregional and international boundaries are located on estuaries. This implies that in many instances adjacent administrations may pursue different goals that impact on the utilisation and management of the same estuary.

The review above indicates that whereas a range of management structures exists for the Swilly, each seeks to achieve a particular sectoral objective. For example the management of SAC's NHAs and SPAs are the responsibility of Duchas and while the management plans include elements that impact on other sectors, the single objective is nature conservation. Similarly, the CLAMS initiative in Lough Swilly is run by DoMNR and while it takes account of other interests, has as its prime objective, the promotion and development of aquaculture. Such sectoral initiatives pursue sectoral goals rather than geographically-focussed (i.e. Lough-Swilly) goals which set objectives and management structures designed to achieve a set of agreed outcomes for a given area. The two can, however, sit comfortably side by side and need not necessarily compromise each other if appropriate site-specific goals and principles are agreed.

Management structures

Estuaries are utilised for a wide variety of purposes that may vary spatially and temporally. Often a single use is dominant (e.g. port use or conservation) but usually a variety of uses exist in each estuary. In a single estuary, management is required where multiple uses co-exist and where there is potential for conflict between different use categories. At an inter-estuary scale, management also provides the potential for regional scale management of estuarine resources which may for example, permit the designation of key uses to specific estuaries.

Approaches to management include

?? Traditional Sectoral Approaches

?? Statutory Single Authority

?? Partnership (Voluntary or statutory)

The Key aspects of each are outlined below.

1. Traditional Sectoral Approach

In this approach, (which characterises present management of the Swilly) bodies with a specific management remit carry out their functions. These bodies may be:

?? **statutory** (e.g. local authorities, port and harbour authorities, national agencies),

?? **voluntary** (e.g. NGOs such as An Taisce, National Trust, RSPB),

?? **private** (e.g. farmers, industrial and commercial companies, tourist industry)

The major advantages are as follows

?? well established traditional approach

?? not too complex

?? covers issues that have been identified as important (e.g. development/conservation)

There are also disadvantages including

- ?? Lack of integration creates gaps, conflicts leading to problems for both natural environment and human activities
- ?? No strategic vision for the estuary with fragmented approach
- ?? Physical and ecological systems usually integrated. Human socio-economic management is less frequently integrated.
- ?? Creates a them/us atmosphere and lack of personal involvement. This may lead to enforcement problems

The traditional sectoral approach often leads to ineffective management in the areas not covered by specific legislation, or where legislation produces incompatible goals for different sectors (e.g. aquaculture licensing and conservation might be handled by different government departments with opposing mandates, policies and legislative requirements).

Recognising the difficulties posed by sectoral management, there have been initiatives in several countries to address these problems. In some instances these seek to integrate activities spatially but retaining a sectoral approach. For example, the European Water Framework Directive lays out a framework for an integrated approach to freshwater, estuarine and nearshore marine water quality in the European Union. This seeks to break down the frequent sub-division of responsibilities that exist at the coast into terrestrial and marine remits and replaces them with a catchment-basin and receiving basin approach.

2. Statutory Single Authority

There is a single example of this type of approach - the Chichester Harbour Authority in the UK.

Chichester Harbour Conservancy was set up by Act of Parliament in 1971 at the request of the county councils whose authority bisected the harbour. It is a statutory harbour authority with the additional powers of a County Council for nature conservation, recreation, landscape etc., in a designated amenity area. It is responsible for the management of Chichester Harbour and an amenity area of land surrounding, broadly coinciding with the Chichester Harbour Area of Outstanding Natural Beauty (AONB).

It was established because the 2 County Councils and 2 separate harbour authorities created problems of fragmented management at a time of increased pressure from recreational use. The need was identified for one authority to manage both land and water and to manage the AONB conservation designation. The authority has an advisory committee represents a wide variety of interests

It has several advantages including

- ?? Unified integrated management leads to consistent strategy

- ?? strong enforcement powers
- ?? advisory committee covers wide range of local interests

Its disadvantages include

- ?? Difficult to achieve. Long tortuous process
- ?? Important powers not delegated (e.g. planning)
- ?? Lack of real public ownership and involvement
- ?? Unlikely to be realistic strategy for large numbers of estuaries: unlikely to be an option now, given widespread coastal pressure

3. Partnership Approaches

Current practice in ICZM in estuaries has been to develop partnerships that bring together stakeholders and seek to develop a common framework for management and to agree a common vision. These are now the dominant approach in Britain, Ireland, western Europe and the USA to the management of estuaries. In such approaches, all stakeholders form a partnership to guide management of the estuary. These typically include statutory, voluntary, commercial, industrial, user group, and individual interests. The partnership then sets out to establish a set of agreed principles, identify issues, carry out research and finally produce an agreed management plan which tries to reconcile conflicting interests in a 'win/win' outcome

In addition to being multi-sectoral, the advantages of such an approach include the following

- ?? They are broadly democratic. People feel ownership of the plan. No one is excluded and a strategic vision can be developed
- ?? Conflicts can be resolved by discussion and agreement toward a common goal
- ?? Enforcement is assisted by local involvement and 'ownership' of the plan
- ?? Practical management outcomes are assured
- ?? Local knowledge can be brought to bear on management
- ?? Socio-cultural perspectives are respected (and most appropriate management tools selected)

Disadvantages also exist. They include the following.

- ?? The process can be time-consuming and unwieldy
- ?? It is weakened if important players won't participate
- ?? Not all conflicts can be resolved
- ?? Lack of information may impede progress
- ?? There is a danger of dominance by a powerful member

?? Funding is a perennial problem. Such initiatives need a long term commitment

Partnerships have the ability to bring together various tiers of government and create both vertically and horizontally integrated management as indicated in Table 8

Table 8. Scales of management and main responsibilities (after Kay & Alder , 1999)

Level of Management (scale)	Key role
European	?? Transboundary issues ?? Creating a common purpose
National	?? Administrative arrangements ?? Setting national objectives and principles ?? Focus on priorities
Regional	?? Translating international and national goals and objectives to local outcomes ?? Aggregate local needs and issues to formulate national and international priorities and programmes
Local	?? Community involvement in setting management options

There is widespread acknowledgement of the need for integration in the management of estuaries. Most acknowledgements are accompanied by calls for, or recommendations on, mechanisms for vertical and horizontal integration of management responsibilities. *Vertical integration* refers to co-ordination between different tiers of government whereas *horizontal integration* refers to integration between different sectors. A number of examples exist of initiatives to integrate the management of estuaries. Several are outlined below.

Bantry Bay Charter

The Bantry Bay Charter project was initiated by Cork County Council with financial support from the EU LIFE programme. It was prompted by conflicts between fishing, aquaculture, petroleum, conservation and other interest groups. Despite management structures for each sectoral division, a lack of co-ordination and

perceived inconsistencies had led to conflict. The project resulted in an agreed vision for the future state of the bay and in the agreement or substantial agreement of several objectives and the means to achieve them.

The process involved a sequence of exercises including identification of stakeholders, identification of issues for debate, formation of working groups, round-table discussions, generation of proposals and finally an exercise in consensus-building that resulted in an agreed vision, a set of principles for management and a series of objectives together with actions designed to achieve them. Objectives were related to:

- ? ? **Co-ordination of policies and plans by regulatory bodies**. To ensure co-ordination, integration and planning between regulatory bodies operating in the coastal zone
- ? ? **Development planning**. To create development planning in the coastal zone that primarily meet the needs of local communities and local enterprises
- ? ? **Information and transparency**. To provide information efficiently and in an easily accessible and usable form that relates to the different activities in the coastal zone.
- ? ? **Legal jurisdiction**. To develop an appropriate governance structure for the whole Bantry Bay coastal zone
- ? ? **Public participation**. To achieve appropriate local participation in the ongoing management and development of the Bantry Bay coastal zone.

Strangford Lough Management Committee

Strangford Lough is a biologically rich and diverse sea lough that has several statutory designations. Government in Northern Ireland recognised that the effective management of Strangford Lough's wildlife interests requires input and co-operation from local people and Lough users. The Strangford Lough Management Committee represents local and special interest groups on and around the Lough. It was established in 1992 to provide advice to Government at a strategic level. The Committee raises issues and advises government on a wide range of topics. The Committee has no executive role in the management of the Lough but works with bodies which have such responsibilities".

The group was established in recognition that government had to consult local interests more. The role of SLMC has become clearer over the years – it is to advise government rather than draft policy. Two tiers (government and others) were originally proposed but many organisations opposed this idea. There is instead a liaison group which is a parallel structure comprising local authorities, and government departments, which the Strangford Lough officer attends. The liaison group consults and co-ordinates the work of SLMC. Advice is provided mainly to central government rather than local authorities.

In addition to DARD and EHS, the members of the SLMC include Ards Borough Council, Association of Strangford Lough Yacht Clubs, CNCC, Down District Council, Joint Council of Wildfowling Associations

for Strangford Lough, Ministers nominees, National Trust, NIAPA, NIEL, Northern Ireland Federation of Sub-aqua Clubs, Northern Ireland Fish Producers Organisation, RSPB, Royal Yachting Association, Shellfish Association of GB, Sports Council for Northern Ireland, Strangford Lough Fisherman's Association, Strangford Lough Nature Conservation Association, UFU, UWT.

The Strangford Lough Management Scheme was launched in October 2001. Much legislation already in place was incorporated in the scheme together with additional voluntary agreements. The scheme also aims to help members develop voluntary codes of conduct in, for example, scuba diving and yachting.

Focus on Firths

A series of estuary partnerships has been developed around the Scottish coast. Known collectively as the Firths Initiative, each partnership comprises a voluntary partnership of local authorities, organisations, businesses and communities committed to working towards integrated, sustainable management of the environmental, economic and community resources of each estuary.

The main focus of each grouping is to develop a management strategy for the estuary in consultation with the main stakeholders. Initiatives currently exist on the Solway, Clyde, Moray, Cromarty, Tay and Forth. Management strategies are typically arranged in themes. For example the Forth Estuary Strategy themes include:

- ?? Management of coastal processes
- ?? Promotion of sustainable management of fisheries
- ?? Promotion of sustainable economic development
- ?? Access and enjoyment
- ?? Improving environmental quality
- ?? Conservation of cultural heritage and landscape
- ?? Maintaining biodiversity
- ?? Strategic planning
- ?? Liaison and partnership planning
- ?? Co-ordinated research and information
- ?? Changing attitudes

These local initiatives work closely with government departments to assist government planning and provide a forum for different sectoral interests to share information and exchange ideas.

Esturiales

The ESTURIALES Network is a European network of regions and cities built around estuaries. The objective of the network is for bodies to share their differing experiences of estuary management and related issues. These include the organisation and planning of riverside areas, reorganising port activities, sustained estuary management and protection of the environment, cultural heritage and landscape.

The aims of the network are as follows

- ?? limit the environmental decline of estuaries
- ?? develop the port economy and aid the conversion of old dockland
- ?? sustain the economic activities of estuaries
- ?? help promote and implement EU policies linked to such concerns.

The network was founded in 1990. Its members are politicians and specialists who focus their efforts on three main areas - exchanging experiences in their specific fields, carrying out studies of mutual interest, and lobbying the European Union. Thus while the initiative does not integrate management on a specific estuary, it permits the exchange of ideas and experiences between members.