Summary of Thesis submitted for being the degree of PhD

by Simon David Rhys Jones

on

An Analysis of Coastal Zone Management in England and the Netherlands

The coastal zone is an area of crucial economic and ecological significance, which has increasingly been recognised in land-use planning. Within the coastal zone, integrating land-use planning and environmental management is recognised as one way to minimise trade-offs of interest between economic development and environmental objectives. Many governments are currently discussing the potential role of integrated coastal zone management (CZM) within their planning systems, while some international organisations promote CZM as a means to counter the loss of coastal resources due to human occupation of the coast.

This thesis examines how the coastal zone in the United Kingdom is perceived and how effectively CZM is being promoted as a planning model to secure sustainable coastal development through the integration of planning policies. Policy integration is not a quixotic quest, but a model suggesting appropriate methods to manage and reduce conflicts. Any planning model can be traceable to varying assumptions and propositions from political thought, which in turn arises from different political practices. Each CZM plan thus reflects the planning and policy culture of its national system.

In order to provide a context within which to assess the UK approach, the development of CZM in the Netherlands is also examined. Both national planning systems have comprehensive statutory land-use planning systems, while marine issues are controlled sectorally by central government. Neither administration has a national CZM policy framework. This thesis therefore includes a comparison of two management plans: the Wash Estuary Management Plan and Integraal Beleidsplan Voordelta. By comparing the organisational structures, policy development and implementation, the case studies provide an insight into the national CZM planning strategy currently being followed in the UK. Finally, the thesis concludes by identifying ways in which CZM might be further improved in the UK and also integrated into European approaches that have recently been initiated.

THE UNIVERSITY OF HULL

An Analysis of Coastal Zone Management in England and the Netherlands

being a Thesis submitted for the degree of PhD

in the University of Hull

by

Simon David Rhys Jones MSc BSc (PNL)

August 1998

Abstract.

The coastal zone is an area of crucial economic and ecological significance that has increasingly been recognised in land-use planning. Within the coastal zone, integrating land-use planning and environmental management is recognised as one way to minimise conflicts of interest between economic development and environmental values. Many governments are currently discussing the potential role of integrated coastal zone management (CZM) within their planning systems, while international organisations promote CZM as a means to counter the loss of coastal resources due to human occupation of the coast.

This thesis examines how the coastal zone in the United Kingdom is perceived and how CZM is being promoted as a planning model to secure sustainable coastal development through the integration of planning policies. Policy integration is not a quixotic quest, but a model suggesting appropriate methods to reduce conflicts. Any planning model can be traceable to varying assumptions and propositions from political thought, which in turn arises from different political practices. Each CZM plan thus reflects the planning and policy culture of its national system.

In order to provide a context within which to assess the UK approach, the development of CZM in the Netherlands is also examined. Both national planning systems have comprehensive statutory land-use planning systems, while marine issues are controlled sectorally by central government. Neither administration has a national CZM policy framework. This thesis therefore presents a comparative analysis of two management plans: the Wash Estuary Management Plan and Integraal Beleidsplan Voordelta. By comparing the organisational structures, policy development and implementation, the case studies provide an insight into the national CZM planning strategy currently being followed in the UK. Finally, the thesis concludes by identifying ways in which CZM might be further improved in the UK and also integrated into European approaches that have recently been initiated.

Acknowledgements.

I would like to thank the Economic and Social Research Council for the Personal Scholarship (No. R00429334178) that enabled me to research and complete my thesis. During my research I have relied on the generosity of a number of people, especially those giving their time for interview. In addition, I would like to acknowledge the help given to me by the University of Rotterdam while I was studying in the Netherlands, both in terms of administrative support and practical help that made the trip such a success. Likewise the *Rijkswaterstaat*, for free access to the Coastal Zone Management Centre's technical library, and the enthusiastic support of members of staff. This trip was additionally assisted by a European *Erasmus* grant.

My thanks goes to friends and colleagues who have always believed that I could and would complete my thesis. Thanks must go to Cliona O'Neill for her patient proof reading of the final draft. The greatest support has always come from Dr. Philip Lee, ever ready with help and encouragement and competition! Most importantly, however, I am so very grateful for my supervisor's help, cajoling, patience and persistence. Any academic achievements during my time at the University of Hull and since, are based on a foundation to work and critical thought fostered by David Symes.

Finally, with love to my parents, for their unshakeable belief and total commitment to me during my extended time at university. I am unlikely ever to appreciate fully what sacrifices they have made throughout my research, and can only thank them here for all their efforts on my behalf.

Table of Contents.

CHAPTER FOUR. DEVELOPMENT OF CZM IN THE UK.

CHAPTER FIVE. CZM IN THE NETHERLANDS.

Chapter Eight. References.

List of Tables.

List of Figures.

List of Abbreviations.

ACN	Action Centred Network
BOV	*Bestuurlijk Overleg Voordelta* (Voordelta Overseeing Authority)
CAMPNET	Coastal Area Planning Network
CEC	Crown Estates Commissioners
CFP	Common Fisheries Policy
CPRE	Council for the Protection of Rural England
CZM	Coastal Zone Management
DoE	Department of the Environment
DoE/WO	Department of the Environment/Welsh Office
EA (NRA)	Environmental Agency (Formerly the National Rivers Authority)
EEZ	Exclusive Economic Zone
EFZ	Exclusive Fisheries Zone
EJSFC	Eastern Joint Sea Fisheries Committee
ESA	Environmentally Sensitive Areas
EU	European Union
FWAG	Farmers' Wildlife Action Group
GVP	Government View Procedure
HoC	House of Commons
IECS	Institute of Estuarine and Coastal Science (The University of Hull)
ICONA	Interdepartmental Co-ordinating Committee for North Sea Affairs
IDB	Internal Drainage Boards
IDG	Inter Departmental Group of the Departmental Environment
IPCC	Intergovernmental Panel on Climate Change
L&V	*Landbouw en Visserij* (Ministry of Agriculture, Nature Conservation and Fisheries)
LWM	Low Water Mark
MAFF	Ministry of Agriculture Fisheries and Food
MoD	Ministry of Defence
NCC	Nature Conservancy Council

NCEAG	National Coasts and Estuaries Advisory Group
NGO	Non-Governmental Organisation
NFU	National Farmers Union
NNR	National Nature Reserve
OECD	Organisation of Economic Co-operation and Development
PKB	*Planologische Kernbeslissing* (Physical Key Planning Decisions)
PPG	Planning Policy Guidance Note
PPO	Preferred Policy Option
POKS	*Provinciaal Overlegorgaan voor de Kustverdediging* (Provincial Consultative Bodies for the Coast)
PRO	Public Records Office
QUANGO	Quasi-Autonomous Non-Governmental Organisation
RARO	*Raad van Advies voor de Ruimtelijke Ordening* (Advisory Physical Planning Council)
RIKZ	*Rijksinstituut for Kust en Zee* (National Institute for Coastal and Marine Management)
RPG	Regional Planning Guidance
RPTI	Royal Town Planning Institute
RSPB	Royal Society for the Protection of Birds
RWS	*Rijkswaterstaat* (Directorate-General for Public Works and Water Management of the Ministry of Transport)
SAC	Special Area of Conservation (EU Habitats Directive)
SFC	Sea Fisheries Committee
SMP	Shoreline Management Plan
SPA	Special Protection Area (EU Birds Directive)
SSSI	Sites of Special Scientific Interest
UK	United Kingdom
UNCED	United Nations Commission on Economic Development
V&W	*Verkeer en Waterstaat* (Ministry of Transport, Public Works and Water Management)
VROM	*Volkshuisvesting, Ruimtelijk Ordening en Milieubeheer* (Ministry of Housing, Physical Planning and Environment)

Chapter One.
Introduction.

In the future of the countryside the coastline is of special importance. There is no need to attempt physiographical or legal definitions, but the word coastline rightly suggests a narrow belt of country all round the island. There is only one such belt and it is extremely easy to spoil it. The narrow limits of the coastal belt and its great attraction are two of the principal factors involved in preservation problems and policies.

Steers, 1944, p. 7.

1.1 The Importance of the Coast.

The coast is of crucial social, economic and ecological significance. It has been variously calculated that 50 per cent of the industrialised world's population lives within 1 kilometre of the coast (Goldberg, 1994) and 60 per cent of the world's population lives within 60 kilometres of the coast. The world's coastal population is expected to double within the next three decades (Barcena, 1992). While the coastline is the primary location focus for human settlement, the World Coastal Conference (1993) considered the 'coastal zone', as an area, to cover less than 15% of the Earth's land surface. Coastal locations are required or preferred for many activities, and coasts can support multiple-uses although individual activities often occur in competition and conflict with others or to their total exclusion of others. The success with which the coast is utilised is becoming increasingly uncertain because, in contrast to the continually evolving demands made of the resource base, the coast is limited both in extent and carrying capacity (Halliday, 1987). The use and demand for coastal resources have both extended and intensified, giving rise to concerns over environmental degradation including shoreline erosion and sea defence, habitat loss, pollution and reduction of biodiversity. Increasingly, such problems are seen within the context of a future, accelerated rise in sea level due to global warming and uncertainty over how individual coastlines will respond. There is a huge range of human activities along the world's coastline (see Chapter 2) and while in general terms these tend to produce relatively localised problems, the interactions of human uses and natural processes are beginning to produce large scale coastal problems that affect long stretches of coastline. Consequently, successful management of the coastal margin is urgently required in many parts of the world.

The European Union's coastline extends over 58,000 kilometres and supports over 50 per cent of Europe's richest and most sensitive ecological areas (Mullard, 1995). Population studies show an increasing trend toward large scale urbanisation with European cities located directly on the coast or within easy reach, which brings further population pressure to bear on many coastal areas (Stanley and Warne, 1993). Increased leisure time in recent decades has led to widespread and varied recreational uses of

coasts and estuaries (see Carter, 1989). Tourism and recreation are now among the most potent threats to environmental conservation. The United Nations Environment Programme, for example, has predicted that from 1984 to 2000 Mediterranean coastal tourism development and associated infrastructure will have increased by 80 per cent (Brinkhorst, 1991). Tourism is only the most recent activity to exploit coastal resources. In the United Kingdom (UK), which possesses one of the longest coastlines (14,500 kilometres) and more estuarine habitat than anywhere else in Europe, approximately one third of all intertidal estuarine habitat and half the saltmarsh has been claimed for agriculture and latterly industry (Davidson *et al.*, 1991). The principal issue for the European coastline is whether the current and future level of exploitation of the coast can be sustained without the continued degradation of the environment.

Current environmental management supports the concept of ecologically sustainable development as the goal of economic and environmental policies. The underlying theory recognises the dependence of economic development on the effective management of natural resources and the maintenance of sustainable yield from ecosystems. It implicitly recognises that long-term growth in economic welfare *per capita* is only feasible if economic growth and environmental protection are treated as complementary goals (OECD, 1993). The protection, maintenance, enhancement and restoration of ecological values at the coast are complex challenges for sustainability because the economic and environmental systems involved cut across international, national, regional and local levels of administration. The recent adherence, by those involved in coastal management, to the ideas of sustainability and 'sustainable coasts', implies a recognition that the coast is not the preserve of any one sphere of activity (Doody, 1995). Meeting the objectives and criteria of ecologically sustainable coastal development can only be achieved following a high degree of co-ordination among the various levels of government and the many agencies involved, within a national framework. Traditional sectoral approaches to managing resources, activities and development in coastal areas are inadequate because while numerous laws and regulations consider coastal issues, explicit policies for managing the coastal environment are generally absent at national level. Viles and Spencer (1995) consider that while coastal problems involve geomorphological, hydrological, ecological and

societal phenomena within unique settings (places), some sort of holistic approach, however flawed, is needed to tackle such complex problems successfully.

Given the context of coastal management this thesis is concerned with the concept of coastal zone management (CZM). The main hypothesis is that the UK government's promotion of CZM falls short of the theoretical concept of holistic and integrated management approach, and succeeds only in promoting multidisciplinary groups led by local authorities to develop land-use management plans with a coastal location. It is therefore, also concerned to understand how the concept of CZM might continue to be progressed with those local authorities in the UK given the task of developing local coastal planning initiatives. This is achieved though a critical comparison with a similar CZM plan developed for a coastal zone in a neighbouring country, and considering the European Union's ambitions for integrated CZM.

The central tenet of the thesis is that CZM is most usefully understood as an outcome of government action, organisational structures and social processes. In itself, this is hardly an original or profound assertion. What is attempted here, however, is a multi-layered explanation of CZM, which objectifies and elucidates the significance of organisational elements of plan development and thus one that may suggest new and potentially useful ways of achieving CZM in practice. This analysis therefore combines the theories of local planning and organisational structure to consider locally developed CZM, rather than focusing on policy outcomes or legislative arrangements that are created at higher levels of government.

1.2 'Managing' the Coastal Zone.

Since the advent of the civil engineer in the 19th Century, coastal management has determined to protect the land from 'attack' by the sea. Selective strategic planning involving a wide range of coastal activities and interests is generally accepted as an approach that is preferable to management measures stimulated by 'crisis response' strategies generated by specific concerns such as coastal defence or nature conservation. The new challenge for coastal managers, planners and administrators is the development

and adoption of new, selective frameworks and methodologies that will allow harmonisation of human interests with the tendency for dynamic evolution that characterises the coast (Tooley and Shennan, 1987). It will require other special coastal management agencies or formal links between current organisations to assist in decision-making through generating and supplying information, creating alternative development options, evaluating plans and implementing preferred options. These elements are essential for the sustainable development of coastal resources.

The concept of CZM has arisen from a recognition of the need for coastal management to do better than merely defending the shoreline (O'Riordan, 1995). CZM has been developed during the last three decades as a 'tool' for managing the use and exploitation of the coast and maritime waters, i.e. a decision-making process. In order to investigate the policies and actions of various coastal users the concept of a 'coastal zone' has been utilised when considering the challenge of planning coastal resources. The coastal zone conveys the notion of a geographical area comprising a narrow band of land and sea either side of the shoreline, but it cannot be defined with any precision (Cendrero, 1989; Charlier and Charlier, 1995). As an area in which atmosphere, lithosphere and hydrosphere interface, the delimitation of zonal boundaries is not normally possible because more often such limits are marked by an environmental transition or gradient. At any one locality the coastal zone may be characterised according to physical, biological or cultural criteria at a variety of scales, because each has an effect on the complexity of the area (see Chapter 2). The criteria need not and rarely do coincide (Carter, 1989). The coastal zone is thus a theoretical construct that can describe in objective terms both ecological systems and human uses and provide a basis for better organisational decision-making. Where CZM is being developed, a coastal zone described by the planning system is the most significant interpretation, in which legal statute determines those organisations with statutory responsibilities, their jurisdictional extent and who are involved in management issues.

From within the coastal zone, however defined, CZM is most simply understood as the holistic management of coastal use in relation to local, regional, national and international goals. It provides a mechanism for the integration of human activities with natural processes that facilitates the sustained use and exploitation of the resources

without degrading the environment (Doody, 1995). CZM implies a particular focus on the interactions between the various activities and resource demands that occur within the coastal zone, but is distinguished from other regulatory schemes in that it explicitly takes into account the multiple-uses in particular coastal areas and attempts to harmonise them to the maximum possible extent. The operational specifics of activities and functions that occur within the coastal zone and particular aspects of management (including pollution control and physical planning) are relevant to CZM only insofar as they impact on other activities and functions that take place within the coastal zone (OECD, 1993).

1.3 Dimensions to CZM.

1.3.1 International Perspectives on CZM.

One of the most influential events placing coastal management on the international political agenda was the United Nations Conference on Environment and Development (the *Earth Summit*) in 1992. The conference provided an international context within which the importance of sustainable use of the environment became a major political focus for the reconciliation of the twin goals of economic growth and environmental protection. Chapter 17 Agenda 21 deals specifically with the protection of oceans, seas and coastal areas, and the rational use and development of their living resources through integrated management and sustainable development. The international promotion of CZM does not imply that this is the most suitable management scale, rather that what is essentially the management of a narrow spatial zone (concurrent with territorial waters) has an international dimension that contributes to the management framework of coastal states.

A number of international laws and agreements apply to national maritime areas that control coastal zone activities affecting international waters and *vice versa* (for example shipping, fisheries and dumping at sea). Statutes include the Oslo Convention (1972), MARPOL Convention (1973) and Paris Convention (1974), which consider aspects of

water quality and pollution control, and the Ramsar Convention on Wetlands (1971) that considers environmental protection. While these agreements consider management issues sectorally they provide important management components that could, with incremental changes, provide the foundation for a more co-ordinated international approach. Recently, several organisations, including the IPCC (1992) and OECD (1993), have promoted more integrated CZM initiatives at a national scale. Although these organisations lack enforceable management mechanisms they have been successful in persuading coastal states to consider co-operating on a wider scale.

1.3.2 The European Perspective.

The European Union's (EU) approach to CZM is especially significant to the development of integrated and coastal planning and management in the UK and the Netherlands. The EU's interest in the fate of the coastal zone reflects that relationship between international dimensions of CZM and national planning interests, and may be summarised as three principle reasons. Firstly, that problems are of a European dimension and cannot be solved by the Member States separately (common natural and cultural heritage, transfers of pollutants and sediments, tourist flows, maritime safety). Problems of a European dimension also include competition for marine resources (fisheries, aggregates and hydrocarbons), the transfer of pollutants and sediments, maritime safety and navigation, and tourist flows particularly to the southern European coastal zones. Secondly, the influence of the European Union's policies and action on the development of the coastal zones (regional, transport, fisheries, environment, agriculture, energy and industrial policy). These measures have not been fully effective, however, because of a lack of co-ordination between the numerous actors influencing the development of the coast. Thirdly, the need for an exchange of experience and know-how in a field where successes are still rare and where there is substantial public and political demand for the conservation of the coastal zones and their sustainable development. There is a need for exchanging successful techniques, knowledge and experience between nations sharing similar technical, legal and institutional backgrounds (Hildreth, 1992).

There are numerous legal, financial and planning instruments available, both at Union and Member State levels, which are directly or indirectly applicable to coastal zones. The Birds Directive (79/409/EEC), for example, protects birds and their habitats through designated Special Protection Areas (SPAs). The coastal zone therefore needs protection because coastal wetlands are exceptionally important for wildfowl on the migratory flyways across Europe. The Habitats Directive (92/43/EEC), however, has expanded the EU's nature conservation remit beyond that of the Birds Directive and, although not primarily oriented towards the coastal zone, should have an enormous positive impact on the conservation of coastal resources (see Chapter 7). Through the *Natura 2000* ecological network more than 40 exclusively coastal habitats and a wide range of plant and animal species, dependent on the coastal zone for part or all of their life-cycle, will be protected in Special Areas of Conservation (SACs). The protection regime for SACs establishes procedures to consider any plan, project or measure that may affect a site, with which the need to calculate the impact of human activities on the coastal ecological resource is implicit (Huggett, 1995).

Notwithstanding these initiatives, the quality of the environment is continuing to deteriorate in many European coastal regions largely due to the absence of mechanisms allowing the complex relationships between human activities and the environment to be taken into account in the decision-making process of development planning (Julien, 1996). Solutions to these problems can only be pursued at a European level and have been requested by political bodies including the European Commission and the Council of Europe (Doody, 1995). The Fifth Action Plan 'Towards Sustainability' provides for an initiative for the integrated management of coastal zones to achieve the sustainable development of their resources, in accordance with the carrying capacity of the coastal environment (European Commission, 1993). In 1994, the Council of the Union adopted a resolution on a Community strategy for CZM for the whole of the Community coastline, inviting the Commission to provide a framework for the coastal zone's conservation and sustainable use within six months. The development process for a strategy statement failed owing to the complexities of achieving an agreed sustainable development approach within the Commission's directorates.

Clearly, the EU has a role to play furthering the integration of economic and environmental policies and developing sustainable use strategies for the coastal zone, but since the 1994 resolution, progress on the protection and integrated management of coasts has been inadequate. Steeley (1994) considered the current EU position to possess fragmented knowledge, interested proposals, poor integration with wider concerns of the EU, ill co-ordinated directives, and potentially wasteful and inappropriate funding. Consequently, it is perhaps not surprising that many European governments appear hesitant about implementing other than sectoral approaches to management and continue to produce plans for individual sites and stretches of coastline. Despite the failure of the 1994 initiative, the desire for an EU CZM strategy, however, was undiminished.

In 1996, the European Commission set up a demonstration programme to identify appropriate measures to remedy the deterioration of conditions in our coastal zones, as requested by the European Council in response to Communication COM(95)511. The Integrated Coastal Zone Management Demonstration Programme is a joint initiative of Directorate Generals XI (Environment), XIV (Fisheries) and XVI (Regional Policy and Cohesion). The Programme's objective is to show what practical conditions must be met if sustainable development is to be achieved in the European coastal zones in all their diversity. The working hypothesis of the demonstration programme is that sustainable development and environmental policies are being implemented too slowly mainly because the processes influencing the development of the coastal zones are insufficiently co-ordinated (European Commission, 1997).

The programme is based on thirty-five demonstration projects (see Appendices), located in a wide variety of natural, socio-economic and cultural settings throughout Europe, as well as six thematic analyses on the topics believed to be the key to successful integrated CZM (see Appendices). The projects have a dual function: to test co-operation models for the integrated management of the coastal zones; and to establish structured dialogue between the European institutions and all the players with a stake in the development of the coastal zones (European Commission, 1998). As such they will identify solutions already implemented, or to be tested, for improving coastal management in the specific contexts of the various demonstration projects. The projects

will also help identify the practical steps and solutions, which can contribute to preventing, continued degradation, unsustainable pressures and increasing land use conflicts in our coastal zones. Finally, they will serve to confirm or disprove our hypotheses as to which factors are necessary for a sustainable management of these zones, particularly multi-sectoral co-ordination and vertical co-ordination between different levels of government, and a wide participation in decision making.

The Demonstration Programme revolves around three key concepts of co-ordination, co-operation and consultation. It will succeed only if those responsible for the demonstration projects are in a position to ensure good co-operation between the various planning authorities, from local to Community level (see Chapter 7).

1.3.3 National Perspectives on CZM.

Most countries are organised to exploit economic opportunities in the coastal zone so that environmental issues receive low political priority. Coastal management is often weighted towards such aspects as coastal defence, ports, fisheries and hydrocarbon extraction. In many nations control of the sea is, for strategic reasons, vested in the state, while land is often overseen by provincial authorities, thereby establishing a fundamental dichotomy in the administration of the coastal zone. Consequently, most coasts have traditionally lacked a governmental or legal 'distinctiveness', allowing them to pass unrecognised as units for management purposes (Carter, 1989).

Any review of national CZM strategies illustrates that there is no unified international approach. Even where coastal and environmental directives do exist, as in the EU, it is left to Member States to interpret how they implement them, creating a diversity of approach. Many governments are currently discussing the potential role of CZM within their prevailing legal and organisational frameworks, which reflects the international concern for the future of coastal environments, particularly in the light of increasing demand and multiple-use. Complex and poorly integrated systems tend to engender bureaucratic structures and encourage politicised and subjective decision making (see Chapter 3). The search for integration or consistency between administrative structures

is a common aim of many national CZM programmes, but policy integration is not a quixotic quest, rather a model suggesting appropriate methods to reduce potential resource-use conflicts (Cicin-Sain, 1993). The process of developing a national CZM .strategy is not simply one of assuming top-down control or allowing bottom-up decision making either, but a mixture of consensus on broad policy goals and competition over the specific means to achieve them (Godschalk, 1992).

National CZM initiatives tend to employ a 'one window' approach, whereby disparate administrations join to form a single agency empowered to act for all (as in the Netherlands), or government designates a 'lead agency' through which all activities are co-ordinated and sanctioned (as in the UK). In both the UK and the Netherlands there are no legal provisions for the general protection of the coast. Instead protection of the coast and the management of resources is achieved through their planning systems, in which hierarchical approaches (i.e. top-down and centralised) predominate, albeit on a sectoral basis. There is a tendency in planning legislation to transfer power from central and regional administration to local authorities (see Chapter 3). While a regulatory agency may be an ideal way of resolving conflicts on an area-wide basis, any quasi-judicial body will be in competition with the array of other agencies, with jurisdictional claims on an area. It is also possible that the values of economic and environmental interests are too large for *ad hoc* co-ordination and consultation to work effectively.

1.3.4 Local Perspectives on CZM in the UK.

Local authorities became increasingly aware of the need to ensure environmental quality at the coast during the 1980s, for example through European initiatives including the Bathing Waters Directive (76/160/EEC), Shellfish Waters Directive (79/923/EEC) and Urban Waste Water Directive (91/271/EEC). In spite of support for statutory coastal management legislation, from a variety of organisations, the government favours an approach that builds on existing institutional structures so that organisations retain their statutory responsibilities.

Halliday (1988) suggested that a number of areas in the statutory planning system needed to be addressed in order to incorporate CZM successfully including the refinement, clarification and consolidation of existing arrangements. In addition, real changes to the current administrative structure were required, such as the extension of planning jurisdiction below the low water mark, and the development of a supra-county managerial body for regional coastal issues. These issues were addressed by new government planning guidance and CZM debate during the early 1990s, which focused attention on local authorities' role in planning at the coast (see Chapter 4). The government's position appears to support Brooke's (1989) interpretation of local authority function in the 1990s (see Chapter 3), that CZM might be expected to develop through mechanisms of flexible specialisation and an enabling authority. Rather than imposing solutions, the government is also seeking to encourage local resolution of conflicts and development of opportunities within a clear framework of national policies (DoE/WO, 1993). As Cawson (1985) suggested, it appears to be encouraging corporatism at a local level through which it can avoid becoming directly involved in implementing policies, while still ensuring national economic concerns are incorporated into local policies. Nordberg (1995), however, questions whether, in such circumstances, local authorities can always resist the pressure for commercial exploitation and defend the natural value of coastal areas.

Consequently, the government considers that local authorities should take the lead in bringing together key organisations with relevant powers and responsibilities in a multi-agency approach. Likewise, it is believed that local authorities and other bodies should seek to resolve conflicts together on a voluntary basis by building consensus (DoE/WO, 1993). While based on the planning system, CZM plans may refer to wider environmental, social and economic contexts, but they are limited to land-use planning matters, limiting the potential of any policy to managing the 'land by the sea' (Taussik, 1995). The potential for delivering true CZM in the UK is examined in this thesis.

1.4 Aims and Objectives of the Thesis.

The precise nature of the physical, chemical and biological processes at work on the coast continues to receive considerable attention (Carter, 1989; Hardisty, 1990a). Traditionally coastal erosion has been regarded as the *bête noire* by engineers and coastal communities alike. The response has usually been structural sea defences, which in the UK has resulted in protecting 38.5 per cent of the coastline from erosion and flooding (Carr, 1988). A general failure to understand or appreciate the complexity of the coast has often led to inappropriate management planning in the past. The challenge for future British (and European) coastal management is to develop a breadth of perspective and the range of skills necessary to evaluate, integrate and incorporate existing and developing knowledge of coastal systems for the benefit of the coast and its resources.

The principal aim of the thesis is to establish whether government's desire for a voluntary non-statutory approach to CZM is fulfilled by placing responsibility for integrating coastal planning issues with local authorities charged with developing area-specific management strategies. It is subsequently to establish what the DoE is intending to achieve through developing CZM in the UK in the way it has. In the UK there is an absence of a specific theory concerning CZM's policy development and implementation, which this thesis strives to construct. A general theory is increasingly being accepted and adopted in national planning systems as a suitable alternative approach to the traditional sectoral approaches for planning multiple-resource multiple-use coastal areas.

The second aim is to assess the potential for effective integration of coastal management organised through a local 'enabling' authority. This will be achieved through consideration of how local authorities and prominent NGOs have interpreted CZM, and what its potential is considered to be without an overarching national strategy. Crucial to this understanding is the institutional organisation and planning procedure adopted by local initiatives, and their effect on policy outcomes. By comparing the experience of a local management plan's development, with the DoE's aims for a sustainable

management approach to coastal planning, the strengths and weaknesses of the system can be established. At this more detailed level, the development of the Wash Estuary Management Plan is used as a case study through which the institutional arrangements between local authorities and other coastal interests can be identified to reveal how these factors influence plan preparation and implementation.

CZM is an internationally accepted concept, albeit with a diversity of interpretations and practices. It is worthwhile considering how the concept is interpreted in other national planning systems. The Netherlands makes a useful comparison for the UK because it is a highly centralised unitary government, sharing a similar local government structure and sophisticated land-use planning system. The third aim is therefore to identify the organisational structural of coastal planning and management in the Netherlands, and how it is implemented locally.

1.5 Methodology.

Initial research for the thesis sought to establish a broad context for coastal management along the east coast of England and establish how CZM was interpreted within the planning system. The lengthy schedule of interviews among local authority managers and major NGOs (see Appendices) considered whether the coast had prompted a formal response in the way in which county councils organised either their departmental or committee structures. The presence of a coastline within a county was found to have caused few modification in county councils' administrative structures. Perhaps, as Halliday (1988) suggested, administrative specialisation decreases when ascending through the tiers of local government and those aspects of the coast significant enough to prompt administrative specialisation were more frequently the province of district councils.

In all cases, responsibility for coastal matters was held by a (senior) planning officer, who co-ordinated *ad hoc* arrangements for coastal projects within the council, but coastal issues formed only a part of any planning officer's duties. Where coastal planning existed, it was in the form of National Parks, AONBs, Heritage Coasts and

SSSIs, which as countryside designations cannot consider the coastal zone *per se*, but identify special landscape areas requiring development control. Landscape conservation has traditionally been a county council's primary objective at the coast, in which a council might expect only to make coastal policies that presume against developments along the undeveloped coast. The consensus of opinion was that within the current system, county councils were able to plan and manage the coast successfully, but only in terms of what the statutory planning system expected.

Nevertheless, from this preliminary investigation several potential case studies were identified. The management of the Northumberland Coast through the *Northumberland Coast Management Plan* (Northumberland County Council, 1993) was considered, for example. As an established plan, however, there was little scope to study the organisational strategies involved in its policy development and implementation strategies. Likewise, as a plan operated within only one county council, there was no opportunity to investigate the potential for co-operative planning at a local authority level promoted by the DoE (see Chapter 4). The development of the *Humber Estuary Management Strategy* (Humber Estuary Management Strategy, 1997) offered a more suitable case study, being local and composed of a number of local authorities, QUANGOs and industrial concerns. The plan was only in its preliminary stages during the research phase of this thesis, and was insufficiently developed to offer insight into the policy development processes required by the thesis's aims and objectives.

The development of the *Wash Estuary Management Strategy* (Wash Estuary Strategy Group, 1996) was chosen as the UK based case-study because it offered a number of advantages over other plans then being developed. At the start of the case study research phase, the management plan's aims and objectives had been established and an issues document published (Wash Estuary Strategy Group, 1994) enabling easy access to those involved in the plan's development and production. The plan was the joint responsibility of English Nature, and Lincolnshire and Norfolk county councils, which enabled the research to consider the potential for developing a non-statutory management plan based on co-operation and co-ordination in accordance with government advice. An advantage of the Wash management plan was that the group responsible for the development of the plan also included representatives from both the

Ports' Authorities and Fisheries, suggesting that the management of the entire coastal zone was being attempted as far as possible within the limitations of the planning system (see Chapter 4). With a lack of large-scale commercial development in the Wash, but a plethora of local coastal uses, the development of a CZM plan provided an ideal opportunity to examine how effective local governance might be achieved. The major challenge facing the plan is how to achieve co-operation and co-ordinated action among a variety of diverse and competing commercial and recreation interests within an area recognised for a number of nationally important environmental conservation designations (see Chapter 6).

1.5.1 Research Strategy: The Case Study.

In examining the research of policy development, a number of research strategies are available including case studies, research surveys, and field surveys (Dunn, *et al.*, 1984; Booth, 1990). The present study is intended to yield the causal inferences concerning the utilisation of policy on the basis of multiple sources of evidence. The case study approach was chosen because criteria for evaluating organisational process problems are more descriptive and qualitative, and require close observation of organisations' operations (Englander, *et al.*, 1977).

The hypotheses imply several requirements for the cases to be studied. They should include CZM-related research, specifically policy development process analysis. The phase of the policy process concerned should be policy-making, including policy formulation. The case studies allow for testing whether the UK government's desire for a voluntary non-statutory approach through an enabling authority fulfils its ambitions for an area-specific coastal management strategy. It also allows the critical analysis, and subsequent comparison, of the organisational structure of coastal planning and management in the Netherlands.

There have been many different reactions to the management of coastal problems world-wide. Not all solutions form an appropriate parallel to the UK situation. To a considerable extent the legal backing to coastal administration in the Netherlands is a

function of the physical environment and Doornkamp (1992) questioned whether parallels in administrative response should really be sought between countries that are facing similar physical circumstances. He concluded that the Dutch example may be appropriate for consideration in the UK context, but it may be more applicable to selected parts of the UK coastline (i.e. those which face similar problems to the one faced by the Netherlands) rather than the coastline as a whole. Unlike Doornkamp many other authors consider the comparative review of national systems to be a valid exercise. Hildreth (1992) suggested the formidable technical, legal and institutional challenges are sufficiently similar in Australia and the United States, that successful techniques developed in one nation could be transferable, at least in part, to the other. Meur-Férec (1997) considered the development of French coastal conservation policies with respect to the UK system, upon which it had been modelled. In spite of markedly different organisation, the French system being based on State initiative and statute while the British system relies on private initiative, British and French conservation politics and concerns show many similarities. The IPCC (1992) argued that many countries could benefit from an exchange of experience leading to the development of comprehensive guidelines for establishing and implementing a national CZM programme. Therefore, results from this study might be safely generalised between the two national planning systems.

The most useful unit of analysis for understanding policy development is the policy sub-system, i.e. those actors from a variety of public and private organisations who are actively involved in the policy programme (Sabatier, 1986). One of the keys to achieving better integration in policy is research on the links between different sectors in a policy area as well as with other policy areas, the problems they do or do not cause, and assessments of fragmented and sectoral policies verses more integrated schemes (Cicin-Sain, 1993). On the basis of the study's aims, the case studies of The Wash Estuary Management Strategy and the *Integraal Voordelta Beleidsplan* were chosen. An important characteristic of the cases chosen is that they are set in the same context (see Chapters 6 and 5 respectively), but they are independent of one another, which allows for a sufficient theoretical generalisation.

1.5.2 Research Method: The Interview.

With two case studies and research of the two national planning frameworks, a qualitative research method will have to be applied (Dunn, 1983), specifically the interview. Interviews serve to gain insight into the inner mechanisms of policy development, so the persons interviewed should have been closely involved in policy-making. The views of other CZM agencies, or target groups of policy, on the way national CZM policy is being made can be sufficiently examined by content analysis of their responses to the national debate on the subject. The views of various stakeholders on national CZM policy as such have been examined as part of the exploratory research (see Appendices).

The interviews serve not only to reveal information that could not be distilled from the content analysis but also open the way to relevant additional documents. The interviews are scheduled according to a relatively unstructured procedure. Such procedures allow respondents maximum freedom to respond to questions, while ensuring that the same procedure can be reproduced in diverse settings (Dunn, 1983). Maximum freedom of response is desirable so as not to limit and bias the information and opinions gained. This implies open-ended questions rather than a multiple-choice questionnaire. To ensure the reproducibility of the interviews as much as possible, the reports of all interviews were sent for check to the respondent concerned afterwards. Due to the relatively unstructured procedure, the interview responses cannot be processed in terms of scores or graduations. Where appropriate, they are referred to in the case study reports.

1.6 The Thesis Outline.

The thesis is organised in the following way. Chapter Two outlines and reviews the current thinking on CZM expressed in international academic literature, and identifies a variety of differing interpretations of both the coastal zone and CZM focus. Chapter

Three outlines and reviews aspects of planning and organisational theory relevant to the creation of a coastal management plan by a multi-disciplinary group led by a local authority. The theoretical constructs developed by these chapters will be subsequently tested, refined and evaluated in their application to case studies, thereby achieving the aims and objectives described below. Recent concerns for the UK's deteriorating and pressured coastline prompted non-governmental organisations to lobby government for an integrated coastal planning strategy. Chapter Four describes how coastal planning has evolved in the UK within the statutory planning system, and the recent debate with government over how to create a CZM approach that integrates current sectoral divisions.

The government is committed to a bottom-up CZM approach within the national planning system established with individual coastal and estuary plans stimulating the co-ordination of activity management. Chapter Five describes the development of the management plan, and the actions of the participants that affect the scope and potential for CZM in such voluntary non-statutory local initiatives.

Chapter Six considers Dutch coastal planning generally, and specifically the development of a management plan for the Voordelta. Through the case study the organisational structure of this local plan will be identified, establishing the influencing factors on plan development. It will therefore be possible to identify the administrative difficulties experienced in an alternative voluntary non-statutory management plan and thus compare it to difficulties experienced by local authorities in the UK.

Finally, Chapter Seven synthesises the analysis of the case studies and attempts to identify whether enabling authorities are able to maximise voluntary planning approaches. Hence it will be possible to establish what the DoE is intending to achieve through developing CZM in the UK in the way it has. The final section of the thesis presents an evaluation of this project, the conclusions reached, and suggests how this approach and methodology defined in this research might be further tested, refined and progressed.

Chapter Two. Coastal Zone Management Theory and Interpretation.

2.1 Introduction.

Ownership of coastal areas takes many forms and has ramifications for use and environmental exploitation. Coastal land may be privately owned, for example, while other facets of the coastal environment (such as sea water) can be regarded as public goods or 'common property'. These complicated patterns of resource ownership mean that multiple uses of many coastal environments are possible, with concomitant conflicts (Viles and Spencer, 1995). The multiple use of coastal areas requires management, usually by national or local government agencies, who are responsible for protecting coastal settlements, permitting certain uses and prescribing others.

The acknowledgement that many coastal areas are hazardous yet valuable environments, threatened by actions taken from the edge of the watershed to the international high seas, has led to an increasing need for the understanding and solving of coastal problems within a context of integrated management. While defining and understanding the environmental issues facing coastlines is crucial, the need to provide an effective executive structure for management is equally important. The aim of CZM is to provide a framework within which society can co-exist harmoniously with nature. As the coast often forms a border between national (land) and international (water) space, designing an effective management framework is not always easy. Even within nations it is difficult to organise a coastal management framework. Therefore, when dealing with the problem of coastal resource conflicts, the concept of a 'coastal zone' may be used to integrate various coastal users and their jurisdictions. The coastal zone is thus a theoretical construct that can objectively describe the organisational structure of ecological systems and human uses of the coast. The objective of subsequent coastal management must be to allocate resources to activities providing net benefits, taking into account the requirements for ecologically sustainable development within the zone (OECD, 1993).

Most management issues require some level of scientific knowledge before they can be tackled effectively, but almost all management issues raise conflicts between various coastal users and interests. Specific interest groups, including lawyers, coastal

engineers, ecologists, landowners and developers, will define both the coastal zone and scope of management issues within their own terms of reference. While these definitions are important, their value is confined to individual issues (for example, shoreline management and coastal defence, or habitat conservation). These limitations make them inappropriate planning structures in the broader context in terms of CZM (see Chapter 1).

Within academic literature, and international and national legislation, however, the characteristics of the coastal zone have been identified and the coastal zone itself defined. This chapter considers those definitions used to identify the zone, the constituent elements of the coastal zone, and the problems created by coastal occupance. Such definitions highlight the difficulty of accurately determining the zone, but each provides an environment for resource planning and conflict management. In recent years there has been a marked shift in coastal management from direct resolution of conflicts, to the planned avoidance of them. CZM has also been variously defined, and this chapter considers the principles of integrated coastal management. For many coastal management issues planning may currently owe little to environmental paradigms or the integration of economic and environmental interests, but a lot to political expediency (see Chapter 5). This chapter concludes by considering how CZM might best be applied to a national planning system and how planning issues might best be incorporated into a management framework.

The coastal zone conveys the notion of a geographical area comprising a narrow band of land and sea either side of the shoreline, but it cannot be defined with any precision (Cendrero, 1989). Infrastructure and activities directly connected with the sea, for example, can stretch beyond five kilometres seaward from the shoreline (ENVIREG, 1994). The delimitation of zonal boundaries is not normally possible according to physical, biological or cultural criteria because the limits are marked by an environmental transition or gradient. Its dynamics, in delicate equilibrium, are easily affected by natural processes and anthropomorphic activities, whose impacts can be felt at considerable distance in time and space (Charlier and Charlier, 1995).

2.2 Physical Components and Processes of the Coastal Zone.

The morphology of the coastal zone is determined by the geomorphological processes interacting with the physical composition of the shoreline. The coast experiences intense energy inputs (transported by waves), that initiate sediment transport mechanisms and morphological changes (Pethick, 1984). Many different shoreline forms arise from interactions between materials and a variable energy supply, but all belong to the same generic type, i.e. they have developed in response to the necessity to dissipate wave energy (Pethick, and Burd, 1993). The coastal zone in geomorphological terms may be viewed as a zone of adjustment.

While it may not be possible to define a geographical coastal zone spatially, the physical reality possesses the discrete geographic components of hinterland, shore, sea and sea-bed. Pethick and Burd (1993) classified the coastline according to the general levels of energy input, sediment types and the resulting morphology (Table 2.1). The morphology was categorised as the lower shore, upper shore, supra-shore and hinterland. Depending on the morphology of the shore (ranging from beaches and mudflats to cliffs) and land-use of the hinterland, the availability of resources and potential opportunities for development (its economic value) are reflected in the definition and use of the coastal zone according to geomorphological parameters.

Pethick and Burd's classification did not consider the full geographic extent of the coastal zone because it was essentially restricted to the shoreline *per se*. To complete a geographic definition of the coastal zone, two further units should be added. Firstly, nearshore waters, because the seaward limit of the coastal zone might be interpreted as where the coastal morphology and wave energy significantly interact (see, for example, Carter, 1989; Pethick, 1984). Secondly, the sea bed adjacent to the coast, which is composed of three separate sections: the continental shelf, continental slope and continental rise. The slope and rise are true oceanographic formations, therefore a coastal zone occupies the nearshore portion of the continental shelf.

Table 2.1 Location of Principle Process Elements on the Shore Profile.

Type of Coast	*Open Coast*	*Bay*	*Estuary*
		ENERGY INPUTS	
	High energy		**Low energy**
Sediment Type	**Solid**	**Non-cohesive**	**Cohesive**
Low shore	**SEDIMENT**	**TRANSPORT**	**PROCESSES**
	Rock Platform	*Shingle/sand Beaches*	*Mud flats*
Upper Shore		**BIOLOGICAL PROCESSES**	
	Rocky/Cliff	*Shingle ridge*	*Marsh Sand Dune*
Supratidal	*Cliff High Backshore*	*Low Backshore*	*Reclaimed marsh*
		EROSION AND FLOODING	
Hinterland	*(Urban Industrial*	*Agricultural*	*Recreational Natural)*

Source: Pethick and Burd, 1993, p.19.

Using Pethick and Burd's classification, Lee (1993) created a framework illustrating the geomorphological coastal zone (Figure 2.1). This framework recognises the importance of the coastline for economic activity and development, and the natural hazards such a dynamic environment represents to investment located there. Rather than rely solely on discrete geographic components, the coastal zone is defined by human interaction with the natural environment. This is a more realistic approach to identifying a geomorphic coastal zone, flexible in application, if vague in definition.

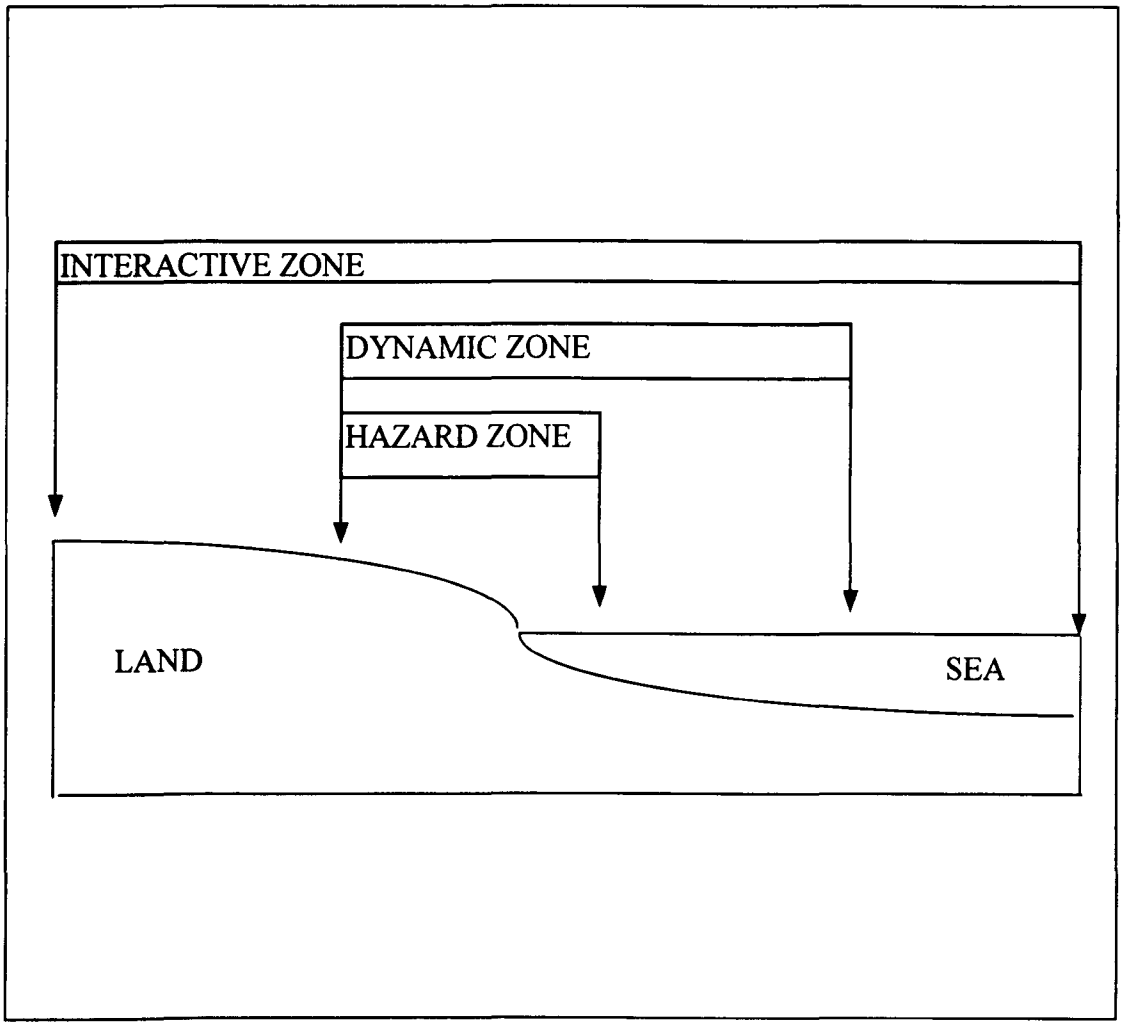
2.3 Biological Components and Processes of the Coastal Zone.

In biological terms, the coastal zone includes habitats submersed by the sea (including those affected by tidal action) and those influenced by a salt-enriched environment, linked by zones of transition that include estuaries, wetlands and sand dunes (Doody, *et al.*, 1992). In a similar manner to the geomorphological coastal zone, therefore, biological criteria cannot be used to identify a specific spatial coastal zone, but only its constituent parts.

Reviewing marine habitats according to tidal action, Doody *et al.*, (1992) identified three characteristic environments of the marine coastal zone: inshore, intertidal and offshore. Lewis (1964) had further divided the inshore into three major zones according to the presence of biological communities determined by tidal ranges: the littoral fringe and the eulittoral zone (collectively termed the littoral zone), and the sublittoral zone. The eulittoral zone is characterised by its interaction particularly with wave action, which extends the upper limit of the littoral fringe well above the level of the highest tide (Fish and Fish, 1989). Conversely, the sublittoral zone extends beyond low water into the inshore to mark the biological limit of the coastal zone some distance offshore.

These apparently separate biological components are not respected by the distribution of fisheries or other wildlife. Estuaries in particular provide spawning grounds, nurseries and feeding areas for shellfish and migratory species of fish. Certain bird species cover considerable distances in search of food on the high sea, but colonise coastal cliffs for

Figure 2.1 A Pictorial Definition of the Coastal Zone.



Source: Lee, 1993, p. 17

breeding. Seals, turtles and cetaceans use the intertidal and inshore environments as a breeding place, nursery and feeding ground while living mainly in the open sea. Consequently, whilst describing the biological limits of the coastal zone in terms of habitat type appears to rely on a very limited selection criteria, it successfully distinguishes between the coast and open sea.

The main terrestrial features of a biological coastal zone are determined by the physical nature of the coastline, i.e. sea cliffs, sand dunes, and salt marshes.[1] Salt marshes develop between mean high water and mean low water of spring tides, and are more defined than the other terrestrial components. On cliff coastlines salt spray is the most important factor in determining an ecological community. Both cliff-top grasslands and sand dunes may extend many kilometres inland before maritime influences are lost, making the landward boundary of the biological coastal zone difficult to identify. Doody *et al.*, (1992) noted that in many areas the extent of the biological 'coastal zone' is limited by industrial development, urbanisation, tourism and recreation, and agricultural development (although it is affected by the saline environment). The effects of land-claim in particular have limited the extent of the biological coastal zone at accessible sites along the coast, i.e. estuaries (see Chapter 6).

2.4 Defining the Coastal Zone.

The concept of the coastal zone is perhaps only recently beyond the definition stage and many different interpretations exist (Knecht and Archer, 1993). As a theoretical construct, the coastal zone incorporates a variety of meanings that can extend the coast beyond its physical reality both inland and to the limits of national jurisdictional offshore (which could be 200 nautical miles). A useful definition, developed by a European Community Workshop (1991), defined the coastal zone as: "A dynamic human and natural system which extends seawards and landwards of the coastline. Its limits are determined by the geographical extent of the natural processes and human

[1] The description includes northern Europe coastal features and so does not include tropical formations such as mangrove swamps.

activities which take place there." The definition emphasises the essential elements of the coastal zone (although not its boundaries).

Precisely defining the coastal zone is not necessarily a priority (Gubbay, 1991a). The House of Commons Environment Committee (Session 1991-2), also concluded that a pragmatic approach must be taken at an appropriate level because the coastal zone may vary from area to area and from issue to issue. Consequently, the coastal zone may best be described as a planning unit embracing inshore waters, intertidal areas, maritime land and economic systems.

2.5 International Agreement on Coastal Management Frameworks.

Defining coastal zones in legal terms is a constant focus of international concern. Definition is usually directed at the fair division, and proper management, of international waters and the biological and non-biological resources contained on the continental shelf (Smith, 1991).

The dramatic variation in the nature of property rights between the land and sea is critically important in the allocation of coastal resources, fixing the limits of coastal zones (Seabrooke and Pickering, 1994). The framework of property rights is progressively more ambiguous in those parts of the natural environment where delimitation is difficult, particularly at sea. The demarcation of sensible nautical boundaries and zones, for example, has been bedevilled by numerous conflicts over security, accessibility and (often unproven) economic estimation (Carter, 1989). Increasingly, the development and management of the coast are based less on individual uses, state and industrial interests, and more on the relationships between them. This will make managing marine and coastal issues more strongly regional (Smith, 1991). Consequently, in areas like the North Sea, international legal agreement defining marine areas is required to establish a framework for managing national coastal zones.

Resource allocation decisions are taken in a context largely defined by legislation and legal precedent. Historically it has been accepted that coastal states have the right to regulate the seas adjoining their coasts in their own interest. Until 1939, for example, a state's sovereignty over a three mile wide territorial sea adjacent to the coast was unquestioned. Within the territorial sea a state had full control over all living and non-living resources, and jurisdiction to prescribe rules for all foreign vessels (Churchill and Lowe, 1988).

After World War II, the USA extended its territorial claim over adjacent marine areas to include the resources of the continental shelf off its coasts. This claim was not based on continuous and effective control over the area, but on the assertion that it was appropriate for rights over the shelf to be vested in the adjacent coastal state (Lowe, 1986). In the 1950s and 1960s, however, even wider limits were claimed (up to 200 nautical miles) in a scramble to claim sea-bed mineral and fishing rights. The trend towards wider jurisdiction reflected the desire to bring coastal waters under national control, and thus regulate fishing, pollution and other activities within them. This was especially the case with newly independent states whose economic future could potentially depend on exploiting marine-based resources (Aurrocoechea and Pethick, 1986).

2.5.1 The 1983 United Nations Convention on the Law of the Sea.

The 1983 United Nations Convention on the Law of the Sea, provides the most appropriate starting point for defining international coastal boundaries within which more locally defined coastal zones might be established. The Convention aimed to achieve a just and equitable international order governing ocean space (United Nations, 1983), by establishing shore-parallel zones, including the limiting of the territorial sea to twelve miles, and the Exclusive Economic Zone (EEZ) and Exclusive Fisheries Zone (EFZ) to 200 miles.

Approximately 35 per cent of the ocean's surface has been incorporated into national jurisdictions under the Law of the Sea Convention (Barcena, 1992). Nationally defined

coastal zones usually occupy a portion of the territorial sea, i.e. immediately adjacent to the shoreline in which most resource based conflicts occur. To determine the limits of the territorial sea, a 'baseline' was used as the reference line from which territorial claims extended seawards 12 nautical miles. The Convention (Article 5) chose the low water mark as the 'standard baseline', but the approach was legalistic, and failed to take into account the physical reality of the low water mark. While the coast is tangible in a gross form, a low-water mark is a theoretical and vacillating concept, which cannot easily be defined in national legislation (see Chapter 4). Consequently, the baseline permitted coastal states to define a coastline that was a legal fiction (Smith, 1991). Fixing the limits of a coastal zone that incorporates land and sea elements, and straddling the land-sea interface, a definition of the territorial sea using baselines was hardly significant. The Convention, however, reinforced coastal states' concern for establishing marine zones to secure marine resources and exploit marine areas, and to provide an international legal framework for the organisation of marine management, within which CZM exists.

At the national scale, and within the territorial sea, the coast experiences the most intense use. The management of ports, nearshore fisheries, urban and tourist developments is of particular importance and is usually based on national legislative frameworks and decision-making structures. These depend on local government and national agency bodies (devolved from central government) together with the private sector (Smith, 1991). It is at the national and local scales that a decisive and practicable definition of a 'coastal zone' might be afforded.

In some coastal US states specific legal provisions have been made to define the coastal zone, such as the Californian Coastal Commission who defined a zone extending up to five miles inland and the limit of state jurisdiction three miles offshore (Gubbay, 1991a). Likewise in Australia, the state of Queensland proposed an "active coastal area" of beaches and wetlands extending one kilometre inland along open coast, and 400 metres inland along the shores of tidal rivers. The state of South Australia defined a seaward boundary of three nautical miles from mean low water of spring tides, and a landward boundary of 100 metres above the mean high water spring tide (Hildreth, 1992). In both the UK and the Netherlands, however, there is no legal recognition of the

concept of a unified coastal zone in spite of the areas being extensively considered in law (see Chapters 4 and 5).

2.6 Utilisation of Coastal Zone Resources.

The coastal zone possesses an abundance of renewable and non-renewable resources that support highly developed economies and extensive concentrations of human settlement. Increasingly, the significance of the coastal zone has become apparent because pristine habitats are being destroyed or degraded (see Chapter 1). In many sensitive areas the pressure created by over-exploitation of the natural environment is compounded by the effects of sea-level rise, which threatens all low-lying coastlines.

Coastal resources can be regarded as commodities in the production of goods and services valued through market prices, such as fishery resources, tourism amenities and hydrocarbon reserves (Table 2.2). Technology, culture and organisation are important components making natural resources accessible for use in the production of goods and services. The availability of resources (both in time and space) is heavily influenced by transport infrastructures, water treatment and distribution structures, and urban developments (Jones and Westmacott, 1993). Viles and Spencer (1995) considered all the major land use options to be present in the coastal zone (Table 2.3). Within the shore zone and on the continental shelf, a more limited range is found, dominated by hunting and gathering (primarily fishing), recreation, waste disposal, wave and tidal power generation, mining and shipping. Most human activity within the shore zone and on continental shelves is linked to land uses further inland.

A brief review of the use of coastal resources underlines the economic significance of the coastal zone and the need to manage it more effectively than at present. All these facets of human use produce specific results in each place, conditioned by the unique circumstances of history and location; but they can be summarised as industrial use, urban and biological uses.

Table 2.2 Typical Goods and Services Produced in a Coastal Resource Region.

GOODS	
Derived From Renewable Resources	**Derived From Non-Renewable Resources**
Fish	Oil
Shellfish	Gas
Kelp and other species of seaweed	Coal
Seashells	Minerals, e.g. manganese, nickel, sulphur, copper
Freshwater (desalinated sea water)	Sand and gravel
Energy from waves, tides and thermal or salinity gradients	
SERVICES	
Derived From Uses of Renewable Resources	**Derived From Non-Renewable Resources**
Transport, national and international	Disposal of wastes consisting of conservative materials, e.g. radioactive and non-degradable compounds in sludge and wastewater, dredging spoil, obsolete products
Defence	Sink for conservative residuals, e.g. radioactive and non-degradable compounds in river water and atmospheric deposition
Facility siting: onshore/offshore, fixed or mobile industrial operations, e.g. materials processing, marine terminals, ports, seabed pipelines and cables, power plants	
Recreation: e.g. bathing, boating, fishing, skin-diving, observing birds/mammals/fish	
Disposal of non-conservative wastes, e.g. degradable compounds in sludge, wastewater and solid wastes	
Sink for non-conservative residuals, e.g. thermal discharges from power plants and other industrial operations, CO_2 in the atmosphere from anthropogenic sources	

Source: Jones and Westmacott, 1993, p. 6.

Table 2.3 Human Uses of the Coastal Zone.

Zone	*Type Of Coast*	*Uses*
Subtidal-Offshore Zone	Continental Shelf	Fishing
		Oil Exploration
		Mining
		Sand Dredging
		Dumping Of Waste
		Sewage Outfalls
	Coral Reefs	Tourism
		Fishing
		Quarrying
	Estuaries	Tidal Barrages
		Coastal Protection Schemes
Intertidal-Nearshore Zones	Sand and Gravel Beaches	Recreation
		Sand And Gravel Mining
		Back Beach Buildings
		Coastal Protection Schemes
	Wetlands	Aquaculture In Converted Ponds
		Oyster Beds
		Reclamation
		Grazing
		Reed And Timber Extraction
		Canals/Pipelines
		Nature Conservation
	Shore Platforms	Seafood Hunting/Collecting
		Quarrying
Backshore Zone	Dunes	Recreation
		Golf Courses
		Nature Reserves
		Building
		Water Extraction
		Army Manoeuvres
	Cliffs	Shore Protection Works
		Building On Cliff Top
		Mining
		Conservation Coasts
Onshore Zone	Coastal Towns and Reclaimed Land	Ports And Harbours
		Marinas
		Housing
		Industry
		Agriculture
		Nature Reserves
		Tourism

Source: Viles and Spencer, 1995.

2.6.1 Industrial Uses of the Coastal Zone.

Industrial uses are linked by the transport infrastructure. Shipping has led to the development of harbours and ports (and the associated communications infrastructure), all of which require coastal zone space. World seaborne trade has expanded over the past quarter of a century, both as gross tonnage and cargo carrying capacity (Hardisty, 1990b). Trade has also become more specialised with ports developing specific operations and terminals for cargoes such as oil, bulk ores, and containers, and roll on/roll off facilities. Industrial activity involves the import and export of raw materials, finished manufactured goods, and maritime service industries such as personal transport (Charlier, 1989). The increasing use of sea transport has resulted in a reliance on the coastal zone's industrial and trade-related infrastructure.

Power stations, as part of the industrial infrastructure, are frequently sighted near harbours and estuaries, which suits their requirement for an abundant cooling water supply. From such locations, power generators supply the local demand for urban and industrial energy. In the near future it may become possible to exploit renewable power resources on a commercial scale, expanding the use of the coastal resource.

Mineral resources in the coastal zone susceptible to mining include hydrocarbons, coal, salts, sulphur and sands containing recoverable precious metals (Charlier, 1989). The economic importance of aggregates has also increased due to the demand for building materials where depletion or environmental constraints on extraction from land resources make aggregates' proximity to the market economically viable. In the UK, for example, 60 per cent of the construction industry's total requirements in south-east England is now derived from offshore (Hardisty, 1990b).

2.6.2 Urban Uses of the Coastal Zone.

Populations concentrate at the coast due to the search for improved living conditions, including the greater variety of resources, job opportunities, and an environment of higher quality (Cendrero, 1989). It has been estimated, for example, that 75 per cent of

Americans live within 80 kilometres of the coast (Charlier, 1989), and 80 per cent of the Australian population live within a 50 kilometre coastal stretch (OECD, 1993). Coastal migration is also adding to the pressures and problems of urbanisation in the coastal zone. In Mediterranean areas, for instance, rates of population growth are three times the European Community average. Coastal water systems associated with coastal populations function as sinks for discharges of a variety of human activity-based sources. Waste originates from a variety of sources including domestic use, industrial manufacture, the extraction industry, agricultural and food processing industries and power generation (Dix, 1981).

Tourism is one of the largest industries in the world, representing 27 per cent of the total export of services in OECD countries, and providing one job out of every sixteen world-wide (OECD, 1993). Traditionally in European countries, and especially the Mediterranean, coastal tourism represents a major growth industry (Cendrero, 1989). In the past two decades, Portugal has experienced a three-fold increase in coastal tourism and Greece a five-fold increase. In Spain, 82 per cent of tourists (approximately 43 million people) crowd the coast at the height of the season and in Italy the coast is visited by 52 million foreign visitors per year. Between 1970 and the mid-1980s, the tourist population doubled to 117 million and is predicted to reach 180 million by the year 2000 (CEC, 1991).

2.6.3 Biological Use of the Coastal Zone.

As areas of high biological productivity, estuaries support resident populations of invertebrates, fish and birds, and provide links in a network vital for breeding and migratory species (Davidson, *et al.*, 1991). Coastal wetlands also constitute areas of dynamic storm and flood protection, naturally adapted to absorbing the consequences of coastal erosion. Unplanned, uncontrolled growth of populations in areas of high wildlife or landscape value can lead to the deterioration of coastal land and water quality (OECD, 1993). Exploitation of coastal zone resources has become increasingly industrialised both in technique and infrastructural support. The marine catch, for example, is close to the maximum production obtainable (approximately 85 million

tonnes), ninety per cent of which is estimated to come from coastal areas. Mariculture currently yields approximately five million tonnes, but is estimated to double by the end of the century (Barcena, 1992).

An undeveloped coastline possesses a high amenity value in terms of visual appeal and opportunities for recreation. Increasingly there is interest in marine habitat conservation both for its tourism potential, through which to raise revenue, and biological quality that will protect the ecological viability of the coastal zone. Recent European legislation including the Habitats Directive (see Chapter 1) has been increasingly focused on the aim of protecting the marine environment and its biological diversity.

2.6.4 Consequences of Coastal Zone Development.

The description of coastal uses is not comprehensive, but it does indicate the ability of the coastal zone to support a broad range of uses, often simultaneously and in the same location (OECD, 1993). Resources and their utilisation in a particular area interact in such a way that the coastal zone behaves as a distinct environmental system. The interaction between natural and human components can upset the dynamic equilibrium of the environment, and draw users of the coastal zone into conflict. The coastal zone environment is severely affected by most human activities and it would be unfair to single out one use as the culprit. Multiple-use of an area merely compounds the situation. Concentrations of populations and industries appear to be the principal factor leading to environmental trauma in coastal and estuarine areas (Charlier and Charlier, 1995). The demands of the urban area (utilising the coastal zone as a resource base, amenity area and development location) superimposed on the natural environment has led to competition between different user groups, and difficulties for those responsible for the management of the area.

The root cause of environmental deterioration lies in the distribution, size and growth of settlements and their competition for resources, which Cendrero (1989) termed 'coastal occupance'. Coastal occupance creates user-group conflicts and resource management problems, which can be separated into resource outcome problems and organisational

process problems (Table 2.4). Englander *et al.*, (1977) describe resource outcome problems defining dissatisfaction with a natural resource state, and organisational process problems describing those deficient characteristics or procedures that inhibit an organisation from attaining its goals and objectives.

2.6.4.1 Resource Outcome Problems.

Associated with the coastal zone occupance is the destruction of coastal habitats, water resource and waste disposal mismanagement, wetland and estuary reclamation, and recreational despoliation and destabilisation of the coast (Englander *et al.*, 1977; Carter, 1989). Urban encroachment is perceived as a primary resource outcome problem by a number of countries[2] and has resulted in a growing demand for space and the destruction of coastal habitat. Cendrero (1989) described how urban encroachment has occurred in a spontaneous and anarchic manner with little concern for the conservation of the environment being used, and with practically no integrated planning at the national level. Similarly, the pollution of the marine environment (and in particular estuaries), is one of the more intractable problems within the coastal zone (Dahl, 1993). It is estimated that over 75 per cent of total pollutants entering the world's oceans are directly from land-based sources and a majority of the remaining pollutants are derived from anthropogenic sources (OECD, 1993).

Englander *et al.*, (1977) noted that user conflicts are magnified by growing coastal pressures and because everyone is pursuing their own interests irrespective of community or national interests. Whilst there are many individual examples of user conflicts in the coastal zone, Lee (1993) summarised the issues as a limited number of conflicts in a few locations of concentrated economic development. These included the need for tourism and recreational facilities and their impact on the unspoilt coast, and the siting of barrages, marinas, urban regeneration schemes and major industrial expansion in estuaries of internationally recognised conservation value. Perhaps most

[2] The OECD reported urbanisation as a problem in Australia, the United States, Canada, Finland, France, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Switzerland, the United Kingdom, and increasingly in Turkey.

Table 2.4 A Summary of Coastal Zone Problems.

	Resource Outcome Problems
**	Intense-use conflicts among competing uses
	Increased population growth with residential, commercial, and industrial development pressures
**	Extensive environmental pollution
	Destructive dredging, filling, and bulkheading
**	Destruction of coastal habitat and degradation of fish and wildlife resources
	Limited public access and recreational opportunities
	Aesthetically displeasing development
	Damage to shoreline environment and development from erosion and other natural phenomena
	Inadequate economic development
	Boating and navigation hazards
	Organisational Process Problems
**	Lack of co-ordination among public agencies
**	Insufficient planning and regulatory authority
	Complex, conflicting, and confusing laws
	Little awareness or concern with coastal problems
	Lack of clearly stated goals
**	Insufficient data base and lack of information for decision making
**	Little understanding or knowledge about coastal ecosystems
	Primitive analytical tools and predictive methodologies
	Lack of state and local government funds to manage the coastal zone adequately
	Dominance of short-term management over long-range planning
**	Resource decisions made primarily on the basis of economic considerations to the exclusion of ecological considerations
	Limited public participation in decision making
	Environmental regulations stifle economic enterprise

** Indicates a predominant problem in the coastal zone.

Source: Englander *et al.*, 1977, pp. 219-220.

significant, however, is the conflict between protecting vulnerable coastal communities, valued landscapes and sites of nationally recognised scientific importance, from the consequences of sea-level rise and modified geomorphological processes that result from coastal engineering.

2.6.4.2 Organisation Process Problems.

Problems in organisational processes have originated in the *ad hoc* development of coastal exploitation and the sectoral approach many states have towards managing the coastal zone. Many of the difficulties in national systems centre on the lack of co-ordination among public agencies and the difficulties that arise from overlapping and fragmented management responsibilities. Compounding the multiplicity of agencies involved at the coast is a lack of planning and regulatory authorities, the spatial limitations of local jurisdictions and the piecemeal nature of most programmes. With the development of numerous CZM plans, state and local governments have also lacked the funds to manage the coastal zone adequately (Englander *et al.*, 1977).

While the coastal zone contains a number of physiographic units and ecosystems the designation of a coastal area for management is likely to be politically determined (Jones and Westmacott, 1993). Likewise, in many management plans, decisions have been made on the basis of economic rather than ecological criteria. This is due to the fact that local governments, which have control over much of the nation's coastal lands through the planning functions, exercise policies that tax property at its highest use providing a string impetus for economic development. As a consequence of the free-market tradition allowing individual owners to use their land as they please, and the desire for short-term profits on the part of developers, local governments and public agencies, long-term planning and sustainable development of the coastal zone is sacrificed.

2.7 Governance in the Coastal Zone.

Using the coastal zone as a planning entity does not explicitly define a geographical area, or describe how such a physical zone can ensure acceptable management outcomes. The uncertainty below low water contrasts with the complexity of definition found above it, which to some extent is the result of the inappropriate extension of concepts developed for terrestrial applications into intertidal and offshore areas (Seabrooke and Pickering, 1994). It is somewhat paradoxical that when defining the coastal zone, seaward boundaries are always considered in international (and national) law, but landward ones seldom have been.

How a 'coastal zone' is used to resolve conflict administratively depends on those organisations within the system and how they operate (see Chapter 3). In the UK, for example, decision-making in the planning system is devolved to the local level (see Chapter 4), while in the Netherlands coastal management decisions are taken at a national level (see Chapter 5). CZM might be described as an inter-organisational matrix, which is not governed by one agency but subject to an array of actors simultaneously attempting to assert governance without one 'owner' or agency having final authority to reconcile competing demands (Fischer, 1990).

2.8 Property Rights and Planning in the Coastal Zone.

Property rights provide a mechanism that enables society to exploit, defend, or conserve the natural environment. In an ordered society, rights, powers, duties and responsibilities encompassing individual and collective aspirations are organised so that when these are not necessarily congruent, or when they diverge or conflict, mechanisms of control and conflict resolution may be applied (Seabrooke and Pickering, 1994). The framework of property rights operates alongside other institutions designed to facilitate the exchange or transfer of property. This framework controls the effect of the utilisation of natural resources, and resolves conflicts arising from the exploitation of property with other competing interests.

Coastal resources, and associated property rights, can be physically and socio-economically interdependent, and are therefore uniquely different. Many of the current problems with coastal property rights, in respect of planning, lie in this failure to link offshore and onshore systems. The dramatic variation in the nature of property rights across the land-sea interface is critically important in considering the planning and management of the resources to be found there (Seabrooke and Pickering, 1994). Essentially, the solution is in the harmonisation of planning systems both above and below the low water mark (Howarth, 1992). CZM initiatives have typically concentrated on development controls and the establishing of networking structures between authorities and co-ordinating policies and management initiatives. The existence of other 'technical' measures have been as by-products of the traditional responsibilities of agencies with responsibilities and interests in the coastal zone. They are not necessarily aimed at effective integrated planning and management (Pickering, 1994).

Land-use planning and management are highly developed in the UK and the Netherlands, with numerous agencies having coastal property rights within their responsibilities (see Chapters 4 and 5 respectively). Conversely, sea use planning and management are only emerging as theories (Smith and Lalwani, 1992). Boundary demarcation and resource allocation remain largely concerned with the oceans beyond the territorial seas, leaving territorial seas and their internal waters largely in a managerial vacuum (see Chapter 2). Any organisation of the coastal zone will be affected by decisions taken in the oceanic realm, and by the extension and adjudication of primarily land-based systems of control into the maritime margins.

When considering property rights in the 'coastal zone', governments are faced with uncertainty and imprecision in the terminology and character of many marine resources. Little consideration has been given to individual property rights in the marine environment, even though exploitation of the resources of the marine environment is undertaken by individuals and corporations, not nations. Much of the debate has largely been restricted to consideration of the marine environment as a national, collective resource within an international framework. Each advance in perceptions of what is

possible or desirable, however, influences coastal values, and generates new issues and questions over the nature, extent and rights of ownership of new discoveries and their development. This has resulted in the uncoordinated and *ad hoc* creation of development and management frameworks. Consequently, the management of terrestrial and marine environments has previously tended towards use-based (i.e. reactive) management, rather than developing sustainable (i.e. pro-active) management strategies to protect the long-term value of coastal zone resources.

2.8.1 Market Failure in the Coastal Zone.

The inefficient allocation of resources at the coast can be the result of market failure. Possibly many of the problems in coastal zone policy and intervention have arisen because markets in coastal resources have not performed properly. Interventions, through policy making, might therefore be used to correct this failure and ensure sustainable use of the resources (OECD, 1993).

Corrections in the operation of markets are only one part of the required improvements in the economic utility of resources that CZM might achieve. A combination of legislative and regulatory instruments to correct market failure (i.e. planning mechanisms) is necessary to restore and maintain sustainable coastal management. There are many instances where the full resource value of the coastal zone has not been properly appreciated or incorporated into decision making, and might even be excluded from the whole planning process. The situation, however, is changing and greater public awareness and participation in coastal planning and management is helping to increase the awareness of decision makers as to the extent to which the public values coastal resources.

2.8.2 Governance and Management of the Coastal Zone.

Socio-political and economic changes during the 20th Century have resulted in the institution of land ownership becoming more complex and less synonymous with

autocratic power. Public demand for access to land and 'rights' of use have become a political issue. At the constitutional (legislature and executive) and organisational (local government) levels new institutions emerged, for example QUANGOs, and old institutions have evolved to meet new demands. At the operational level, however, resource allocation decisions, and the resolution of conflicts that resulted from them have become more complex and problematic (Seabrooke and Pickering, 1994). The institutional context of land management has become more antagonistic and confrontational having lost the traditional support of constitution and organisational authority on which it relied.

In the development of a CZM plan each user group becomes a 'stakeholder' in the political arena, able to defend its own interests and perceptions of the coastal zone. User groups must, therefore, be induced to forego, reduce or otherwise co-ordinate their level of use through governance. They must respond to the combination of laws, rules and known scientific information in relation to their own preferences, incomes and perceptions of the coastal resource base. For governance to generate a framework for resource management, it is necessary to achieve consensus amongst those involved.

Governance can fail to generate binding decisions that beneficially affect the array of values and resources contained within the coastal zone, because of the often unanticipated result of the multiplicity of laws and agencies influencing its use (Fischer, 1990). It can also fail due to the lack of consistency between user groups that means no one group can represent the coastal zone holistically. Since the coastal zone overlaps existing jurisdictional boundaries and private ownership patterns they can be affected by political bodies that may not desire effective co-ordination. The absence of political and administrative institutions with area-wide jurisdictions, corresponding to the spatial area of the coastal zone, hampers the effectiveness of decision-making there. Consequently, one organisation can thwart proposed changes through litigation or simply by refusing to participate.

It is important to distinguish between management and governance. Governance provides the framework and sets the rules for management actions through markets, votes, executive decisions and judicial findings to effect policy. Management is

accomplished through an agency established to implement policy set forth through the governance process. It begins with an agreed goal and generates the means for accomplishing it once such a policy has been formulated. Along with this multiple-use component, coastal management includes an aerial unit through which geographic areas are managed as a unit. Thus coastal management includes an on-going stewardship for the wise use of resources and physical space in specific areas (Hildreth, 1992).

Many problems of a coastal area are local perturbations of other problems that indirectly reflect state or national concerns. Any additional jurisdictional pattern, superimposed on an already complex coastal use matrix of local and regional problem alignments, creates an inherent degree of arbitrariness within which conflict resolution is contemplative. There is a good case for the view that the coastal zone is a mere administrative abstraction, or assumption, created for the purpose of constraining decisions about resource development, among other things. It depends in part on those agencies involved whether or not it is successful in this role.

2.9 Coastal Zone Management Interpretation.

The underlying problem in the coastal zone is to establish how the economic development of the coastal milieu might be reconciled with adequate environmental protection. Finding a suitable methodology to resolve numerous and often competing demands on the coastal zone with minimal conflict, and in a sustainable way, is extremely difficult and, as yet, no simple solution has been developed at an international or national level. Coastal zones, however defined, suffer from fragmented sectoral administrative structures and weak dispersed management structures. In this multi-sectoral, multi-agency situation it is easy for government policies emanating from different sector areas or governmental levels, to conflict. Dahl (1993, p. 567) considered it usual "to find 10 or more national ministries plus intermediate and local government structures and specialising regulatory and management bodies, all responsible for some aspects of the coastal areas." This 'conventional planning approach' is characterised by a planning agency having a centralised and technocratic

perspective, and the formulation and implementation of short, medium and long-term plans (Sagasti, 1988).

It is now widely accepted that a conventional approach to planning in the coastal zone is inappropriate, and that the central challenge to managing it is to integrate both land and sea use (Smith, 1991). Pravdic (1992) considered current environmental management strategies to have outlived their usefulness. The inability of economic systems to protect the environment while satisfying social objectives, indicates that a different management approach is needed to integrate the economy and environment on a regional and supranational level. The shift from sectoral, multiple-use perspectives to an integrated, sustainable development approach, requires co-ordination of national government agencies and regional organisations (Vallega, 1993). Ideally, the solution is to consider planning as an on-going process rather than emphasising the production of plans that are never implemented fully. In such a way planning could act to reduce the deleterious effects of human use without transferring problems elsewhere (i.e. farther along shore or out to sea) and thereby achieve the sustainable planning of the coast.

2.9.1 Defining Coastal Zone Management.

Making the distinction between what is and what is not CZM is critically important for conducting international and national comparative analyses and the consequent exchange of information. If lessons are to be learned from the experience of CZM programmes, it must be possible to define what constitutes CZM among the myriad of approaches to environmental planning and management.

Most definitions are reasonably consistent and identify those features that make CZM a distinct discipline (see, for example, IPCC, 1992; UNCED, 1992; OECD, 1993). In 1989, the Coastal Area Planning Network (1989) agreed that CZM best described the practice of managing coastal regions, uses and resources. As a practical approach it was defined "a dynamic process in which a co-ordinating strategy is developed and implemented for the allocation of environmental, socio-cultural and institutional resources to achieve the conservation and sustainable multiple-use of the coastal zone".

Chua (1993, p. 84) redefined CZM as "a resource management system which employs an integrative, holistic approach and an interactive planning process in addressing the complex management in issues in the coastal area."

As a theoretical construct, CZM involves a contemporary notion of the sustainable use of natural resources and a holistic approach to problem solving, incorporated into a framework strategy that promotes integration. CZM therefore concerns all aspects of human activity and all environmental matters affecting an identified region or locale, however it is defined. The OECD (1993) considered CZM distinguishable from management of particular activities within the coastal zone because their operational specifics are relevant only insofar as they impact on other functions within the coastal zone, between coastal zone activities and activities in other regions. It can be justified due to the concentration and variety of human activity in the coastal zone and the complexity and diversity of the coastal environment itself.

Sorensen (1993) considered CZM a process that should continue over considerable time, requiring a spatially defined boundary incorporating the ocean environment and some inland limit. Within this process, a governance arrangement would be required that uses one or more management strategies to rationalise and systematise allocation decisions. Finally, the management system's perspective would require a multi-sectoral approach to be used in the design and implementation of the management strategy. Sorensen warned that it is often difficult to determine whether a programme is a CZM effort and/or some other form of environmental planning and management. A systems' perspective and multi-sectoral approach are considered key attributes that serve to distinguish CZM from other management efforts at the coast.

Any policy and management action designed to address coastal development conflicts must be founded on a sound understanding of the coastal zone. This includes knowledge of the productive and assimilative capacities of the natural environment, the political, socio-cultural and economic conditions of the coastal zone, and social costs involved (Chua, 1993). Scura *et al.*, (1992) described the coastal management system as a cube consisting of three basic dimensions: process, issues and actions (Figure 2.2). The management process identifies and analyses management issues and develops the

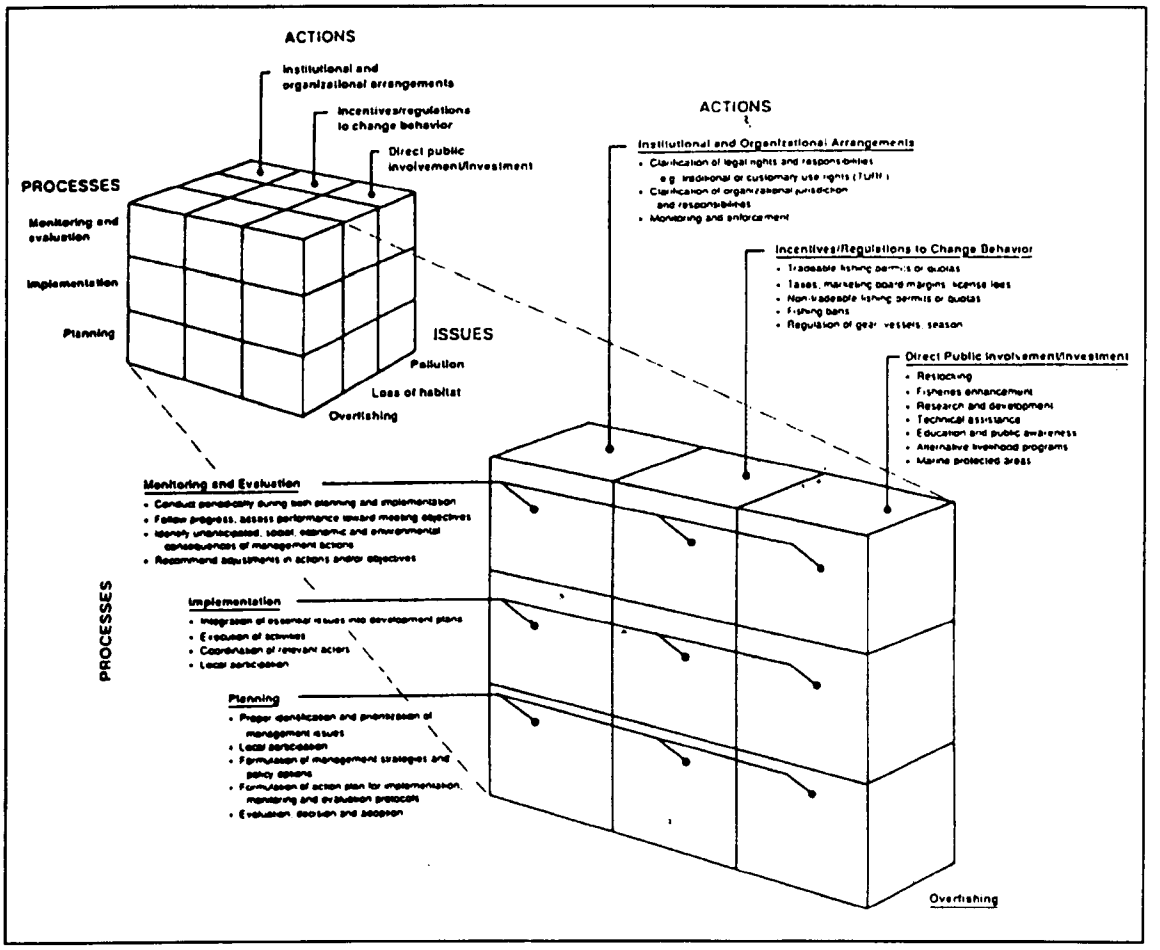
necessary policies and management options. This process consists of three essential sequential components: planning, implementation, and monitoring and evaluation. All three dimensions are of equal importance and mutually dependent. Unlike sectoral management issues, which are represented by one sector of the cube (for example, over-fishing), the spill-over effects of one form of development will be addressed under the present form of integrated management system. This is the ideal situation, but Chua (1993) considered it seldom if not ever achievable.

Kenchington and Crawford (1993) suggested a number of elements were required to establish a CZM system. These included a dynamic long-term vision of the desired condition of the coastal zone, and national objectives to which policies and management would be directed. Some objectives will be mutually contradictory, but if their achievement is subject to the overarching purpose, each will be constrained with respect to the others. In addition a clear, legally based identification of the authority responsible for achieving strategy implementation in relation to any other organisation responsible for the area in question is required. Finally the political, administrative and stakeholder will, commitment and resources to implement the strategy are necessary.

2.9.2 Integration in Coastal Zone Management.

The coastal system is bi-modal, consisting of the ecosystem and its use structure, which during development must be kept at an optimum level of management (Vallega, 1993). Not all potential uses of the coastal zone can be fully developed because competing uses exclude others. When the coastal area is governed with the aim of pursuing sustainable management, it becomes a system in which the relationship between both social and natural elements are considerably more harmonious than traditional sectoral approaches. This level of management requires integration of elements as well as integration of decision-making. Coastal area management is thus closely linked to general systems' theory because the concept of a holistic system leads to the concept of process in decision-making (see Chapter 3). The creation of such a framework is crucial, and the shift from sectoral multiple issue perspectives to an integrated, sustainable development approach requires co-ordination not only of national government agencies, but also

Figure 2.2 Coastal Zone Management System.



Source: Scura, *et al.*, (1992) p. 32.

regional and international organisations. It is clear that integration is crucial to CZM, and if it is to be achieved a series of overlapping strategies will be required to address management issues that arise.

According to Underdal (1980), agencies involved in coastal management must behave as a single system to develop a comprehensive policy in terms of space, time and users. Agencies' actions need to be integrated to account for both short and long term consequences, and be consistent both in vertical and horizontal dimensions. In the vertical dimension, specific actions taken by different agencies conform to general guidelines; in the horizontal dimension, one policy is pursued at any specific period in time (Miles, 1992).

Knecht and Archer (1993) identified four factors to addressing integration in CZM. The first, *intergovernmental*, encompassed the necessary integration of various levels of government into coastal management, especially between the national level and regional/local levels. Secondly, integration across the *land-sea interface*, is basic to the concept of CZM, where the area to be managed is usually defined in terms of shoreland and water area. Thirdly, understanding the effects that straddle the land-sea boundary is of fundamental importance, and any management plan that purports to be a viable CZM approach must address this issue. Fourthly, the planning and management of activities on land and at sea would be carried out separately, without regard to the interactions between them, so integration across the land-sea boundary is perhaps *the* distinguishing characteristic of CZM. The first two dimensions imply, if not require, *intersectoral* integration, which obligates all activities affecting the coastal resources or the coastal environment to come within 'reach' of the management programme. Finally, the *interdisciplinary* aspect of integration reflects the realisation that the coastal zone not only involves the use and protection of natural resources and the coastal environment, but that significant economic and social issues almost always exist as well. Any decision to protect or develop a particular resource usually has significant economic implications, which must be viewed as a 'variable' since it is likely to be incorporated into CZM programmes in differing degrees.

Vallejo's (1993) review of CZM and national development planning identified a similar series of components necessary to integrate physical and economic planning. These included a multi-sectoral, interdisciplinary organisation, working towards an agreed set of coastal management goals, based on sustainable development. Joint planning by all administrative levels requires the use of a development plan to provided the framework for integrating all CZM policies. Finally, networks or systems could be used to promote integration, where institutional arrangements for CZM encompass all administrative levels, from local government via regional planning bodies to national development planning.

Both Knecht and Archer's classification and Vallejo's review of integration in CZM can be summarised into three elements: policy, institution and planning (Table 2.5). Each provides insight into the specific measures required for integration of CZM.

2.9.2.1 Policy Elements.

The fundamental cause of coastal problems in many national planning systems is the lack of explicit policies for the development of the coast and management of its resources. This results in the traditional sectoral framework of fragmented, reactive and contradictory policies, which often produce externalities. Externalities are consequences that are not adequately incorporated as decision premises because they fall outside the scope of the relevant organisation's attention. From resource distribution or efficiency perspectives, policies with significant externalities can be 'bad'. If externalities have a negative impact on the overall system the likelihood is that they will be 'overproduced', while positive externalities tend to be 'under produced' (Underdal, 1980). The key to policy integration is therefore to internalise externalities.

2.9.2.2 Institution Elements.

Ideally CZM will be developed within an existing governmental structure by blending existing capabilities and resources rather than superimposing an administrative structure

Table 2.5 Major Elements of Integration.

Type of Planning	*Policy*	*Institutional*	*Planning*
Global	• Attain consistency and cohesiveness of coastal policy with national development policy • Adopt a long-range perspective • Integrate coastal policy with national ocean policy • Develop comprehensive and holistic perspective on the part of decision-makers	• Designate a major co-ordinating mechanism for CZM within the national planning agency • Establish institutional arrangements that include the total hierarchy of government • Stress inter-institutional measures	• Adopt a long-term coastal development strategy • Ensure consistency between coastal strategy and national development plan • Specify entry points for linking coastal planning within the overall development planning process • Stress decentralised planning
Sectoral	• Seek coherence and consistency with all sectoral policies in force • Define component policies of coastal policy • Transfer issues horizontally, from a narrow sector to an inter-sectoral perspective	• Define decision-making procedures that encourage integration • Re-enforce inter-dependence links among sectors • Establish conflict-resolution mechanisms	• Stress joint sectoral planning • Establish maximum linkages between sectors at all levels, to ensure a co-ordinated and efficient planning system • Stress maximum participation of all parties involved in the planning process
Spatial (regional, provincial, local)	• Consider local, provincial and regional interests, needs and opportunities within the framework of national coastal policies and objectives • Transfer coastal policy to specific regional, provincial and local development objectives and priorities for action	• Establish chain of communication and procedures for decision-making among operating agents • Establish clear mechanisms for integration between lower and higher levels of decision-making • Encourage participatory approaches	• Ensure co-ordination in the preparation of area-based and resource management plans requiring close inter-agency co-operation and people participation • Ensure that CZM related projects have become integral parts of municipal, provincial and regional investment programmes

Source: Vallejo, 1993, p. 173

on the established administration. Institution building requires a co-ordinating mechanism at the highest level of government, charged with the tasks of developing a long-term coastal strategy, strengthening multi-sectoral co-operation, and providing overall guidance to the processes of planning and implementation (Vallejo, 1993). In order to decentralise the planning process and achieve substantive integration, plans are generally developed by groups led by specific agencies, and later implemented by different organisations at various levels in the implementation structure. The features that characterise the institutional elements of integration are the participation of all interested parties in CZM planning, the mutual interdependence of sectors, and a goal-achievement oriented approach.

2.9.2.3 Planning Elements.

Planning the coastal zone relates to decision-making designed to regulate the development and use of coastal resources serving the interest of all user-groups. The need to formulate a long-term perspective is a priority in development planning. In this context, there is a need to formulate a long-term coastal strategy to form the basis for decision-making in the medium and short-term within a framework that can effectively address current and emerging issues. From a management perspective, traditional sectoral approaches should be replaced by proactive and anticipatory responses that avoid conflicts, thereby maximising the economic and environmental benefits to be derived from multiple-use activities (Barcena, 1992).

2.9.3 Coastal Zone Management in National Planning Systems.

The IPCC (1994) advised that any national programme should facilitate integrated decision-making through a process of co-operation and co-ordination among sectors. Developing a CZM programme generally requires regional planning at a scale broader than local or even small state government. For this to be achieved without disenfranchising local inhabitants, requires an approach substantially different from conventional, narrowly based, reactive and incremental planning and management.

Institutional and organisational arrangements are thus imperative in carrying out the projects and programmes. Since CZM is a government programme it must have the necessary legitimacy in implementation, and governments need to develop guidelines identifying where national priorities should override local considerations and *vice versa*. The issue has received a lot of attention from policy makers, and many experts tend only to think of coastal management solely from a political perspective (Vallega, 1993).

It is apparent that CZM assigns special importance to decision-making. The framework of decision functions can appear very complicated because agencies are often endowed with multiple roles from the international to local levels. With different levels of power are involved, government agencies tend to form elite internal groups that establish and maintain co-operative relationships between themselves, progressively segregating local coastal interests from decision-making (see Chapter 3).

There are two basic approaches to the institutional arrangement for managing the coastal zone. Firstly, coastal nations may adopt an institutional response and redesign the system, changing the laws, structure and responsibilities of management agencies, even creating a specific coastal zone authority. Carter (1989) identified the US Coastal Zone Management Act 1972 as the most comprehensive and well-defined example of such a management strategy. Alternatively, coastal nations may act within prevailing legal and organisational frameworks through the development of new planning and management techniques and tools to improve the working of resource management systems. The result is a nebulous association of 'interested' parties with a lead agency in a fragmented *ad hoc* approach. Usually, heavily oriented towards regulation, the main policy instrument for resource allocation at a local level continues to be land/water-use planning or zoning (Hildebrand and Norrena, 1992). To graft CZM onto existing administrative, judicial and legislative structures is difficult, often resulting in inter-agency conflict. Resolution of such conflicts inevitably requires compromise solutions, and the coast suffers from less effective management (Carter, 1989). Neither the UK nor the Netherlands has developed a new institutional approach, both favouring to develop processes within their existing administrative systems.

2.10 Conclusion.

The benefits of integrated CZM are generally well recognised, and it is considered a desirable management approach to address complex coastal resource use issues holistically (OECD, 1993). The coastal and nearshore environments are currently under threat of destruction that is likely only to increase. International opinion is that enhanced investment in appropriate schemes for managing these resources and reconciling conflicts must be made a priority (see Chapter 1). The application of sound environmental management strategies will be vital in ensuing the qualities of the coastal zone's resources are safeguarded. CZM represents a new paradigm that reconciles economic and environmental interests, and ensures that local policies consider the national perspective in planning and management decisions.

Nevertheless, CZM should not be regarded as a universal panacea for coastal problems (Jackson and O'Donnell, 1993). In purely economic terms, for example, integration should not be considered as an end in itself because, in certain circumstances, integration may be feasible but the costs of achieving it make it an inappropriate option. Alternatively, a low cost option may exist that could achieve the same results as a fully developed CZM programme, such as appointing a 'lead agency' for all coastal planning issues (Gubbay, 1989). Consequently, the OECD (1993) concluded the economic imperative of CZM is to ensure the best use of coastal resources in a least cost way. It should therefore only be pursued to the extent that its benefits outweigh the costs of its achievement.

From an academic viewpoint, a 'fully integrated' CZM programme would take account of all coastal geographies from the upper reaches of coastal watersheds to the distant boundary of the EEZ. It would also include all sectors of coastal use within a framework that takes into account ecological, economic, and social goals and impacts (Knecht and Archer, 1993). Certain barriers exist, however, which make this idealised state difficult to attain. Most regulations and management of coastal and ocean activities are on a use-by-use basis through single purpose, specialised legislation. For the most part, each of the regulations is administered by a different agency using a

different set of procedures and policies. This is certainly the case in both England and the Netherlands, where the challenge is to achieve the maximum possible co-ordination of management effort among all coastal groups from statutory bodies to interest groups and the public.

Interest groups and issue networks are inevitable features of any bureaucracy. At times, however, they can become pathological when groups of powerful interests acquire sufficient power to co-opt the agency to pursue goals that conflict with the agency's programmes (see Chapter 3). This results in progressive segregation as the solidarity inside the agency increases at the expense of solidarity and integrated management for the whole organisation. The existence of powerful constituencies associated with each of the more important coastal issues (such as fisheries, agriculture, and port authorities) will strongly resist the incorporation of 'their' coastal activity into a broader management context. Consequently, the rate at which additional integration can be pursued may depend upon the rate at which existing single use constituencies can be convinced that integration is beneficial. Although it is preferable to develop a national CZM programme, it is more realistic to develop a site-specific programme manageable by local authorities (Chua, 1993). In systems that are based on *ad hoc* responsibilities, site-specific plans have been actively promoted by government. It is difficult to measure how national planning outputs influence environmental outcomes, but relatively simple to assess a programme in respect to those outputs, such as the number of coastal programmes prepared by local government (Sorensen, 1993). Hence this thesis utilising two case studies of site-specific plans within national planning systems to assess progress (see Chapter 5 and 6), in relation to the vision and objectives of each plan, with respect to the relevant government policy.

Chapter Three. Planning, Power and Organisational Structures.

3.1 Introduction.

CZM has yet to form a discrete theoretical basis, and many social science fields are able to contribute to its understanding. The absence of a discrete social science foundation highlights the comparatively recent development of the subject, and reflects the diversity of concerns within the coastal zone that regards coastal resources in their own terms. While the majority of coastal zone interests lie outside the statutory planning systems in both the UK and the Netherlands, the positioning of CZM is intrinsically linked to the evolution of coastal management, planning theory and political practices (Low, 1991). In the previous chapter CZM's aims were identified as reconciling the economic and environmental development of the coastal milieu by developing a suitable methodology to resolve the numerous competing, and incompatible, demands on the coastal zone. In implementation, Vallejo (1993) considered CZM to be a process of joint planning by a multi-sectoral, interdisciplinary organisation at all administrative levels, working towards an agreed set of coastal management goals and using a development plan to provide a framework for integrating all policies.

In Chapter One it was identified that CZM is most usefully understood as an outcome of government action, organisational structures and social processes. Likewise, in Chapter Two, it was established that CZM is a practical approach that co-ordinates a strategy to allocate socio-cultural and environmental resources for the sustainable and multiple-use of the coastal zone. Within this framework is a set of assumptions that contribute to 'good' CZM including policy integration, interdisciplinary and consensus driven plan development, holistic planning and management, and a defined coastal zone. In order to attain these elements an organisational network needs to be developed within the existing administrative structure, which blends existing capabilities and resources, and engenders the political commitment to implement a plan.

The conventional sectoral, multiple-use approach to planning in the coastal zone does not consider the coastal zone holistically, but rather on an issue by issue basis. This has led to the environmental and development problems described in Chapter Two. In view of the limitations to conventional planning, Sagasti (1988) identified three elements for

a new approach to planning that would suit CZM's requirement for integrated, holistic planning. The first element would be to enlarge the scope of anticipatory decisions involved in the planning process by integrating all perspectives in plan development, thereby enlarging the scope of decision-making and reaching beyond the traditional concern of planning. The second element is to acknowledge the provisional nature of development plans as a collection of ephemeral anticipatory decisions. The redefinition of the concept of planning horizons, and the erosion of the rigid and conventional frameworks, will provide a more flexible and realistic way of dealing with each development issue. The final element is to build a broad and solid social support base to transcend the mostly technocratic character of the conventional approach, which goes beyond the traditional, centralised, governmental planning process.

In the UK and the Netherlands, CZM is promoted as a regional, voluntary, non-statutory integrated planning mechanism. Any management plan developed is likely to be reached through negotiation and collective decision-making by a multi-disciplinary group charged with the task, utilising the elements suggested by Sagasti (1988). Such an approach is based on the current developments in planning theory and utilises the latest models of planning that aim to promote consensus, flexible specialisation and multiple development objectives in decision-making. Such bureaucratic structures, based on consensus, often lead to politicised decision-making. The ability of a coastal user-group to exercise power within an organisation is therefore an important aspect of consensus planning. By involvement in a multidisciplinary group negotiating planning aims, an organisation can pursue its own political agenda and attempt to influence the development group's decision-making. An important factor is how a group might achieve this in CZM planning because in a voluntary initiative it influences the outcome of any planning policies and the likelihood of success.

The aim of this chapter is to identify the theoretical basis supporting multidisciplinary and negotiative planning, and consider the development of current planning theory through which CZM is approached in the UK and the Netherlands. The analysis contributes to the insight into the development of CZM initiatives by outlining and reviewing aspects of planning and organisational theory relevant to the creation of a CZM plan, by an multi-disciplinary *ad hoc* group. These will subsequently be tested

against case studies in England and the Netherlands to ascertain the successes of such a planning approach and the weaknesses of local authority-led consensus planning. Through this analysis it will be possible to identify possible modifications that could be made to the system, given that it is the main hypothesis of this thesis that UK CZM falls short of the theoretical concept of holistic and integrated management approach.

3.2 The Development of Land-Use Planning and Planning Theory.

Planning theory tends to be placeless, while planning practice typically bears the imprint of distinctive national, legal and administrative systems (Hague, 1991). There is a specific body of British planning law and practice for example, but no uniquely British planning theory. Theorists have developed frameworks to organise and relate differing concepts, but such typologies focus on the concerns and characteristics of the theories, rather than national contexts (see Yiftchel, 1989; Poulton, 1991). Theories can easily cross national boundaries, and the same theories can gain credence in different political, economic and cultural contents. A key factor influencing the acceptance of theories is likely to be the extent to which they can address the legitimacy of planning within a particular national context (Hague, 1991). Academic attention to planning peaked in the 'great debate' of the 1940s, between proponents of government planning (Mannheim, 1944; Tugwell, 1940; Wootton, 1944) and defenders of 'free' markets (Hayek, 1944; von Mises, 1952). Mannheim's (1940) argument that planning harnessed systematised social scientific knowledge and techniques to the management of collective affairs in a democratic society, predominated by the 1950s, legitimising the technist-rational approach.

The primary concern of planning is the reduction of uncertainty, which is a desirable management goal. Central and local governments undertake 'planning', i.e. predicting the future to formulate normative policies to influence it (Lichfield and Darin-Drabkin, 1980). Modern planning is linked to concepts of democracy and progress and centres on the challenge of finding ways in which citizens, acting together, can manage their collective concerns, with respect to space and time (Friedmann, 1987). In any

government, planning is undertaken for many sectors (including education, health, transport, agriculture and environment) with appropriate methodology and techniques. Parallel to sectoral planning, the planning of towns and regions seeks to integrate all the sectoral activities in terms of the implications for two all-pervasive elements: land-use and development. CZM is such a form of regional planning, aiming to integrate all aspects of planning across the land-sea interface in an administratively defined coastal zone. It is a theoretical construct, however, superimposed on traditional planning theories and practices with the potential to influence the successful implementation of any management plan. Reviewing the development of planning and planning theory provides an insight into the objectives of current planning and the potential for CZM's development beyond the traditional, centralised, governmental planning process.

According to Elcock (1994, p. 233) planning is "at once a necessary and a controversial local government activity." Planning is controversial because development plans prepared by local authorities might appear unrealistic and irrelevant, or involve intervention in an area's socio-economic activity, which could be regarded as illegitimate interference. It is necessary, however, because local authorities are legally required to undertake a wide range of planning functions, especially in the management of the physical environment. When making planning decisions, reducing uncertainty requires consultation with policy makers and elected politicians to improve communications and co-ordination (Friend and Jessop, 1969; Friend, *et al.*, 1977). Local authorities have therefore developed mechanisms and processes necessary to implement environmental policies within the planning system. The planning system is the accepted mechanism for accommodating and mediating conflicts between a variety of interests-in-hand, and procedural issues are of central importance.

The development of planning methodologies in the UK has usually been based on the town and country planning system, which is the longest established form of planning in local government. Rhodes (1992) characterised the town and country planning system during its early years as apolitical. Planning was undertaken through consensual dealing or 'partnership' between Whitehall and local councils and conflict between central and local government was spasmodic and usually focused on the loss local government of function. Intergovernmental relations were, above all, characterised by professional

bureaucratic brokerage and the relative weakness of political linkages between the centre and periphery (Bulpitt, 1983). Following the return of a Conservative government in 1951 the Ministry of Local Government and Planning was renamed Housing and Local Government, which reflected the political primacy of housing and the lack of support for 'planning' (equated by Conservatives with restriction). Regional offices of the Ministry were abolished, removing the only regional organisation able to co-ordinate planning (Cullingworth, 1994). The result was that the only institutional framework capable of co-ordinating coastal action in the future was removed and any coastal planning action has since had to be treated sectorally and on an issue-led basis.

During the 1960s and 1970s, academic argument explored different planning theories. In the 1970s, planning in Britain was dominated by Procedural Theories (Meyerson and Banfield, 1957; Davidoff and Reiner, 1962), and the Marxist critique (Harvey, 1973; Castells, 1977; Kirk, 1980). Pluralism took some time to assimilate into the unitary character of the British system (Hague, 1991). Once accepted, however, procedural planning was particularly influential for local governments reviewing strategic plans that had stagnated in bureaucratic procedures during the 1960s (see Chapter 4). Lindbolm (1959) had suggested that government actions should not be guided by attempts at comprehensive co-ordination, but by increased reliance on existing political bargaining processes. Procedural theory legitimised planning as a method of rational evaluation of choices and organisation of decision-making to justify the exercise of bureaucratic power and procedures.

Planning based on procedural theory provides the foundation for the current approach of negotiation and collective decision-making by a multi-disciplinary group adopted by CZM. It was assumed that formal and informal groups pursuing divergent goals would place all important issues on the public agenda, thereby guaranteeing that no groups dominated plan development. It was considered that political competition would eliminate the need for government action and co-ordination (Klosterman, 1985). Pluralist bargaining, however, suffered from a number of shortcomings that limited its potential. The pluralist model considered the political arena to be dominated by individuals and groups who would use their access to government officials and other élites to protect their status and ensure that the government acted in their interests.

Group bargaining failed adequately to provide collective goods and services that provided small benefits to a large number of individuals. Small groups, with professionally defined interests, could achieve their objectives by being more effectively organised, resulting in the 'exploitation of the great by the small'. Pluralist bargaining systematically neglected the political spill-over effects of government actions and policies on non-represented groups and individuals by turning over government to the most interested parties. Consequently, the public were effectively excluded from the policy formulation and implementation processes.

By the end of the 1970s, the underlying weakness of planning theory's dependence on economic growth, and the weaknesses of procedural planning theory in its subordination to direct political control with state bureaucracies, had been revealed by the recession (Ravetz, 1980). The whole direction of planning was challenged by grass-root communities and middle class conservation societies. By the early 1980s the crisis in planning was deeply rooted and comprehensive in its scope. The main ideologies for planning, a broad consensus in favour of change and economic growth to generate change, had been seriously undermined. The 'premature legitimation' of town and country planning in the 1950s had left planning vulnerable and fragmented (Hudson, 1979). Consequently, as Hague (1991, p. 300) observed, "anything and everything was planning theory; at a time when there was no consensus about the desirable form or scope of British planning, there was no clear legitimacy."

The 1980s marked a turning point in the development of planning theory. Planning had diversified in practice, with localised experimentation enabling different local authorities to develop their own policy variants. Diversification occurred within the context of a unified debate about planning, which focused on the development plan system and the decision-making practices by professional planners. There was a general consensus on the role of the planning system with arguments centred on relatively minor procedural matters and rarefied planning theory (Brindley, *et al.*, 1989). 'Free Market' ideas gained new currency, and deregulation, privatisation and rolling back the state became key phrases (Hague, 1991). By contrast, planning meant bureaucracy, i.e. the triumph of sectoral interests, imperfections in free market operation and the denial of consumer preferences without any justifiable reason. Once established, any bureaucracy

is considered to consolidate itself, and to enhance its status and perceived legitimacy (Reade, 1987).

The Thatcher administration 'systematically attacked' the planning system through a series of deregulatory devices that restricted the elements of development planning and development control within land-use planning. Planning could be justified only to the extent that it reconstituted itself as economic development, a role many planners actively undertook (Sorensen, 1982, 1983; Sorensen and Day, 1981). Planning theory, and the legitimation of planning, had to address a new agenda. Sorensen (1982) proposed that planning should have a prescribed basis in the (right wing) traditions of free markets, the rule of law, and scepticism towards government intention. Conversely, Gidden's (1984) 'notion of structuration' considered that institutional analysts could use the underlying ideas of economic, political and ideological structures in a non-functionalist and flexible manner. Poulton and Begg (1988) also suggested a (right wing) public choice theory, characterised by short term, reactive planning, aimed at neighbourhood protection and the securing of property values. Thornley (1990) related the changes being made to the planning system not just to the general ideas of the New Right, but to their immediate British embodiment as 'Thatcherism'. The form of state intervention changed from universalism and the welfare base in society, to promotion of an entrepreneurial ethos through infrastructure investment, within a climate of deregulation. Thornley (1990) identified the important features of Thatcherism as being 'market principles', 'authoritarian decentralism' and 'anti-bureaucratic sentiments', and saw these reflected in a number of measures that sought to prune, by-pass or replace the planning system (Rydin, 1993). In the 1990s, however, the Thatcherite project that presented the market as an alternative to planning, was brought to a remarkably sudden halt as a political idea, though many of the practices it instituted remain (see Thornley, 1991; Cloke, 1992). The most important with respect to CZM was the development of the 'enabling authority'.

The programme of the third Thatcher government (elected in 1987) was explicit in its ambition to reorganise and restructure the local government system. Market-based mechanisms introduced to restructure local government were influential, but their impacts were ambiguous and did not result in the 'death of local government' (see

Minford, 1988; Leys, 1989). Instead, legislative changes acted as a catalyst raising the possibility of an 'enabling' local authority, which could act in more pluralist ways than in the past, alongside a wide variety of public, private and voluntary agencies (Ridley, 1988). Cawson (1985) had been sceptical about such 'local corporatism' that implied too much independence of economy and state at local level, but did concede that 'corporatism at a local level' might be possible through which national interests could be represented or imposed. Consequently, there has been an increased pressure for multidisciplinary local authority led coalitions to develop local strategic planning (see Cooke, 1988; Brooke, 1989; Hirst, 1989).

The government has promoted the development of CZM through corporatism at a local level, considering that local authorities should take the lead in bringing together key coastal organisations with relevant powers and responsibilities in a multi-agency approach (see Chapter 4). Rather than imposing solutions, however, the DoE is also seeking to encourage local resolution of conflicts and development of opportunities within a clear framework of national policies (DoE, 1993).

3.2.1 Current Planning Theories.

Any effective planning initiative, such as CZM, has to be firmly based on locally sensitive mechanisms for formulating and implementing policies. It is unlikely that such an exercise can be based on objective principles of the appropriate scope of each level's responsibilities. The principles that govern who does what and who controls what will always be some kind of political construction rather than objective principle. The present approach to development and planning in localities is to give central government wide discretionary powers to oversee local strategies and decisions. It is just such an approach, constraining local interventions, that has led central government over the years to preoccupy itself with the form and content of development plans. Unfettered central power inhibits local effectiveness and obscures the way that issues are resolved. Policy statements *per se* in a discretionary power system can become a mask behind which different policies may be pursued. The failure to specify, in substantive terms, the competencies of different levels of government within the

planning system, has been one of the main deficiencies of the institutional arrangements in both the British and Dutch systems.

Appropriate realisation of a 'modern' conception of planning is still provided by 'rational mastery of the irrational' (Mannheim, 1940). This focuses on the processes through which goals are formulated and strategies for achieving them devised, i.e. rules to govern changes in systems are expressed as performance criteria, linked back to objectives. Healey (1992) considered the conception of inter-subjective reasoning among diverse discourse communities could provide a direction for the invention of forms and practices of planning behaviour. This pluralist framework cannot escape the criticisms of scientific rationalism, and while consensual positions can be arrived at, the planning frameworks developed through this route are still founded on systematised rationality and scientific understanding. It retains the source of modernity's dominatory potential in which cleavages in contemporary society (class, culture, gender and race) are resolved through power struggles between conflicting forces (Habermas, 1987).

Current planning theory seeks to define the kind of planning that is compatible with contemporary understandings of a democratic attitude. One view is the 'process' route, exploring the communicative dimensions of collectively debating and deciding matters of collective concern. Healey (1992) argued that the conception of planning as a communicative enterprise holds most promise for a democratic form of planning in the contemporary context. This is almost certainly the case, and is examined in depth later in this Chapter and subsequently in the case studies of British and Dutch CZM plan development strategies. With the focus of CZM initiatives being based on local authority led voluntary plans, the bargaining process is an especially relevant position from which to consider plan-making. The contemporary rediscovery of environmental planning, as environmentalism and sustainability, has been fuelled by a widespread and inter-discursive debate on governance of economic development at a local level. The general purpose of environmental planning in this context is to balance these connecting but often contradicting aims. What is being invented, in theory and practice, is a new form of planning through debate and reasoned inter-subjective argument.

3.2.1.1 Environmentalism and Sustainability.

During the 1990s, environmental planning has achieved new importance in the policy sphere to become the issue of the decade (Rydin, 1993). The conventional role of land-use planning has been to balance competing objectives with 'the environment', viewed only as one factor to be balanced against the demand for transport infrastructure, urban and retail development, and other projects. Sustainability has introduced the notion of environmental limits, and the planning system can ensure the maintenance of such capacities. It will not be achieved by the traditional approach of trading the environment off against other considerations. There are elements of sustainability in the way the planning system operates, but the actual delivery of sustainable development requires further fundamental change in policy and practice (Bishop, 1994).

Radical conceptions of environmental sustainability have been debated, and the vocabulary of limits and capacities given increasing prominence. Both approaches encourage consideration of the impacts of development, and integration of adverse impacts in environmental management. Although there may be consensus over how sustainability can be more systematically incorporated into plan and decision making, the ability of the current planning system to deliver a strong vision of sustainability is questioned (Williams, 1993a, 1993b).

3.2.1.2 The 'Hierarchy, Co-ordination and Broadly Based Interest' Model.

Healey (1992) also reviewed the scope of institutional arrangements that frame the communicative dimension of the current planning system. Of the four different models abstracted from the range of proposals reviewed, two are particularly relevant to planning and management in the Dutch and UK coastal zones.

The Hierarchy, Co-ordination and Broadly Based Interest Model is characterised by the three levels of government (central, regional and local) co-operating in partnership through the process of techno-rationality, pluralist politics and co-operatist negotiation. The model sets out to return to a more coherent hierarchical system, with each level

clearly articulating its strategies and plans within the context of the above level. Central government remains the locus of policy control, but its freedom to manoeuvre is limited by the discipline of making, and regularly reviewing, coherent policy statements. In the UK, the DoE has moved in this direction, consolidating planning circulars into a series of Planning Policy Guidance Notes (PPGs) and promoting CZM as a local authority led voluntary initiative (see Chapter 4). In the Netherlands, coastal defence policy was rationalised in the 1990 review and the management structure redesigned (see Chapter 5). The spatial dimensions (and trade-offs) between these rational policies only make sense when realised in localities. Democratic accountability and public involvement are advocated by proponents who seek to relate the level of decision-making to the need for active involvement of those most affected by the issues in question. Allowing third parties to challenge decisions where the public sector is the landowner or developer, further serves to increase public sector accountability. This is a difficult compromise to achieve through broadly based interest representation in policy and plan preparation.

The ability of the model to deliver such a framework depends upon the extent to which the public sector's role can be organised on hierarchically integrated and co-ordinated lines (see Chapters 5 and 6). If co-ordination within and between levels and agencies is not achieved, the consequence is a continuing diffusion of the public sector and plurality of interest mediation processes. Further, the degree of openness in such a system would continue to depend upon politicians and officials. This model, therefore, does not reflect the demand from environmental interest groups concerned for a more significant standing in the planning system. In addition, despite the need to provide opportunities for local control, it still subjects localities to a strongly centralist regime. The hierarchical co-ordination thus depends upon co-ordination within the public sector rather than addressing the problem of co-ordination between levels and agencies, and its accountability fails to the extent that such co-ordination is not delivered.

3.2.1.3 The 'Rights and Localism' Model.

The Rights And Localism Model is characterised by strong single-tier institutional arrangements in which the roles of community and parish councils are strengthened

through pluralist and semi-judicial inquiry. Public participation is encouraged, and development control and planning functions devolved wholly to the locality. In this model the relationship between statutory plans and implementation is reinforced to ensure that plans prepared and approved through broadly based participation, are not undermined through implementation.

While there is a strong case for recognising that local government is the appropriate agency for determining and implementing whatever coastal land-use and environmental policies local people wish to pursue, there are problems. How to accommodate legitimate national and regional interests in a context of local community control remains unclear, for example. This is especially the case in the coastal zone where nationally important economic activities are sited and militarily strategic concerns are located. Localism does not guarantee that individual districts will necessarily act in ways to safeguard their own long-term interests, or promote *all* their interests. In effect, localities would be set in competition with one another, particularly in coastal locations economically dependent on tourism and recreation. A 'localist' approach could readily increase the inequalities between areas as a result of exclusionary strategies by affluent communities and competition among districts in search of development opportunities (Healey, 1992).

3.2.1.4 Ideologies of Holism and Technism.

Building on Healey's models, the routinised ideologies of Technism and Holism effectively describe current planning theory supporting CZM. Technism, according to Reade (1987), is a set of vague ideas that portray planning not only as technical, but also in some sense objective and 'beyond' politics. It is the more traditional approach to planning. Technism's ideology gained legitimacy and power through planners' techniques being applied to the production of new plans and policies rather than by assessment of the effects of previous actions. This approach distracts attention from the politically sensitive matters of the purposes of planning and its consequences, and focuses interests upon the methods of planning. Methods are perceived, by the

politicians and public alike, as 'internal' or 'professional' planning matters and therefore make planning seem almost 'scientific'.

Holism also describes a set of vague ideas that centre on the assertion that planning is all-embracing and comprehensive, and provides benefits for all interest groups in society. Planners often tend to the view that in reality interests in society are not in conflict, but often appear to be. The production of a plan by all participants is the means by which these apparent conflicts can be resolved and the inherent consensus of interests made clear. The ideology portrays planners as generalists, with 'synoptic' vision and uses such terms as 'comprehensiveness', 'co-ordination' and 'integration'.

While holism represents an ideological approach best suited to the development of CZM, planning theory and practice is not so advanced as to adopt it completely. Technism is the more widespread approach to the management of the environment being the traditional planning strategy, and CZM is currently focused by many local authorities and central governments in this way. In addition to the inertia of central government's willingness to co-operate fully over conflicting development and management issues, pressure groups remain protective of their single-issue interests which undermine the ability to compromise and achieve consensus over management issues. Nevertheless, in political science terms, both holism and technism reflect the planners' assumption that society rests on consensus.

3.2.2 Conclusion.

The legacy of Thatcherism on planning theory ensures that planning in the 1990s is characterised by the dominance of market-led styles capable only of meeting the needs of that section of society able to pay for goods and services, or exercise power during the search for consensus in a plan's development (Brindley, *et al.*, 1989). The planning system at work, however, is not merely the aggregate consequence of the assertion of economic interests' claims. A great deal of legislative activity takes the form of delegating duties or powers and giving implementation and enforcement discretion to

executive authorities. At a local authority level the way in which decisions are reached, and the influencing factors, are crucial determinants of 'policy as practice'.

An alternative approach to focusing on the form or context of plans is to consider the development of planning decisions from whatever level of government based on explicitly stated and politically agreed criteria. Plans and policy statements produced after public debate and political decisions would emerge from the need to develop and state the reasoning behind, and possible interpretations of, criteria. Within the British and Dutch planning systems it has the advantage of moving away from the hierarchical models of policy articulation and implementation in the planning field towards one that recognises the *de facto* position of each level as an active participant in the interest mediation process. This kind of approach would encourage co-ordination through various forms of partisan mutual adjustment. It would recognise the conflicts presented within the public sector, but in more explicit and accountable ways than the present structure that assumes central power or consensus.

The processes and functions of a CZM system must therefore be recognised in order to understand how it will develop policies for the coast. Systems can be modelled to characterise their political processes, but no one model of agency relationships provides an adequate general description of behaviour between the plethora of interests involved in the coastal zone. Rees (1990) identified three types of model (procedural rationality, organisational process and political bargaining) which offer some partial insights into processes influencing choice and their likely implications. All suggest that the search for substantive rationality, implicit in the attempts to devise integrated management structures and objective tools of policy and project analysis, are likely to have limited practical effect.

Unfortunately, the government's promotion of CZM in the UK has failed to consider the actions and interactions of multi-disciplinary planning organisations attempting to achieve planning objectives. To understand the operation of such a system more fully, an analysis might be approached through organisational theory. This theory considers the structure of organisations, and the ability of participants to exploit their power and

influence, during decision-making to support a plan's common goals while defending their own interests.

3.3 Organisational Theory.

Organisational theory has been developed from classical economic theory during the past four decades to incorporate newer sociological themes such as localism and individual autonomy (Jackson, 1982). There are particularly clear links between recent developments in network theory (Djanberg, 1997) and the work of social and policy theorists (Jordan and Greenaway, 1997). Such theorists regard policy change as a cognitive struggle between different groups which share the ultimate aim to get their preferred ideas or beliefs reflected in public policy programmes (Hall, 1993). Unlike other social theories (including planning), organisational theory has developed distinct European and American schools (Kassen, 1976). The European tradition is a macro or structural approach, and has evolved from the American notion of goals to that of fluid power in and around the organisation, and from participants devoid of influence to one in which virtually everyone has influence.

Accordingly, Pfeffer (1978) described an organisation as "a collection of coalitions or interest groups, held together by a common purpose, sharing common resources, and attempting to maintain legitimacy from the larger society." Banner and Gagné (1995) considered certain characteristics applied to all types of organisations, but that of primary importance was the goal direction. Organisations may have more than one goal, some complimentary, others potentially conflicting, and while it is not essential for all members to endorse the organisation's goals fully, policy effectiveness is generally related to the extent to which members understand and support the attainment of goals. Hall (1993) argued that all policy making takes place within the context of a particular set of ideas that recognises some social interests as more legitimate than others, and privilege some lines of policy over others. Consequently, all organisations may have invisible demarcations between what is and what is not part of that organisation, and membership is distinct and regulated with certain admission requirements. A further characteristic is the social interaction between members (unrelated to organisational

goals) that enables representatives from differing professions to communicate clearly and maximise their negotiating effectiveness. Finally, an organisation might have a discernible culture (a shared belief, value and attitude system) that creates and maintains its structure and process. Sabatier (1987) noted that those organisations that could demonstrate technical competence would stand a much greater chance of being admitted into the institutional realms (the policy network) where policy is determined.

The range of organisational theory is considerable, but particularly relevant to CZM is central-local government relations. The following analysis therefore considers suitable models of organisational structure for local authority led CZM initiatives. Theory no longer views the 'organisation' as society's instrument (Parsons, 1960) but instead as a political arena in which groups attempt to seize sufficient power to influence the policy outcome in their own interest (see Mintzberg, 1983). Within any model of organisational structure, the power to influence conflict resolution strategies and decision-making are principal components of the organisation's effectiveness. The contribution of each in turn is considered with respect to the development of CZM, providing a framework for the subsequent analysis of the two case studies (see Chapters 5 and 6).

3.3.1 The 'Multiple Actors/Multiple Goals' Model.

Attempting to reconcile economic and behavioural theory in management, Cyert and March (1963) presented a hypothesis wherein a coalition of individuals bargain among themselves to determine the organisation's goals. This model replaced one authority at the centre of power with multiple authorities, previously excluded from the decision-making process, now able to determine organisational goals. In any multiple actor coalition the dynamics of shifting participants, changing needs and fluctuating power will generate conflicts among differing actors. The organisation deals with inconsistent and variable goals by attending to them sequentially. With the opportunity to negotiate individual policy outcomes, power to influence the bargaining process is there for whoever can seize it, and goal formation becomes a power game in which multiple actors vie to secure their aims.

This model provides a framework in which Rhodes' (1981) 'power dependency model' can operate (described below), although it oversimplifies the situation assuming that all actors strive for individual ambition on each goal. In any CZM plan there will be policy areas that are predetermined, for example, conservation, coastal defence, and tourism and recreation, which do not concern certain actors who exclude themselves from negotiations. Nevertheless, it provides a useful model from which initially to describe the situation in most local authorities, where development of a CZM plan has been organised in co-operation with government agencies, neighbouring authorities, and influential local interest groups.

3.3.2 The 'Matrix Structure' Model.

From the 'multiple actor/multiple goal' model new organisational forms have been developed that are radically different from traditional bureaucracy. It is well recognised that structures affect and constrain behaviour, performance, co-ordination and the activities that go on in organisations (Pfeffer, 1977). New organisational forms emphasise the decentralisation of power, coalition empowerment, flexibility and adaptability, and authority based on knowledge. Successful CZM must be based on a decision making process capable of integrating all relevant issues and sectoral interests (Gubbay 1990) and the most relevant decision-making model to CZM is the matrix.

The matrix utilises grouping teams of specialists, drawn from an organisation's typical functional departmentalisation, to facilitate the completion of projects (Banner and Gagné, 1995). The model is applicable to any organisation; specialists come together to work, and once the project is completed return to their 'functional' positions in the organisation's bureaucracy. These temporary project teams are the hallmark of the matrix structure. It is not uncommon to have several matrix teams working simultaneously on different projects while the bureaucracy is doing the routine, administrative work, of the organisation.

The bureaucratic organisation is hierarchical and formalised, but the specialist team is decentralised (a flat structure with everyone essentially at the same level), dependent on flexibility and reliant on sapiential (knowledge based) authority. Accordingly, when the team is working at the point in the development cycle that requires specialist expertise that specialist becomes the leader. Whereas bureaucracies are characterised by intense political behaviour adopting a 'win-lose' strategy, the matrix structure has lower internal politics, given that the purpose of the team tends to override selfish concerns in an attempt to achieve 'win-win' solutions to policy development (described below). Banner and Gagné (1995) considered that the matrix should be employed only when there was a need for high differentiation and integration, when specific outcomes were uncertain or not easily subject to planning. The matrix structure is therefore ideally suited to the development of CZM, particularly in respect of its macro structure. The decision-making members of the policy planning group represent the matrix's bureaucratic foundation, while project teams involve specialists and interest groups concerned with sectoral issues. Contentious political issues can be dealt with at a specialist level before presenting policy solutions to the bureaucratic centre for a decision with respect to the overall plan.

3.3.3 The 'Policy Networks' Model.

The expansion in governmental responsibilities and the growing complexity of public affairs is leading to policy being made within increasingly specialised arenas with a limited number of participants, described by current planning theory (Campbell *et al.*, 1989). Central government's ability to implement policy, however, is constrained by its fragmentation, limited co-ordinating capacity and non-executive nature, which makes it dependent on other organisations to achieve its aims. If government wants to achieve a particular policy goal with the minimum of conflict it needs the assistance of local government in the implementation of that policy. The co-operation of local authorities, however, is not always forthcoming and cannot be guaranteed. As the policy process continues to fragment, policy-making is becoming increasingly pluralistic and an increasing number of groups is being admitted into the policy arena. Government exchanges access to the policy development process for local authority co-operation,

and then operates through a variety of policy networks in a complex differentiated polity (Smith, 1993).

If true sustainable use of the coast is to be achieved, policy networks must recognise the links between science, human activity and nature conservation in the coastal zone (see Chapter 2). The decision-making process needs to overcome planning constraints that include the complex range and nature of coastal planning and management issues, different planning and administrative regimes on land and sea, and poor communication between interest groups. Despite the potential advantages of networks, they do not occur automatically or in all policy areas. The right range of circumstances has to exist for a policy community to develop, i.e. a degree of consensus, the single decision-making centre within government, and interest groups that can deliver members (Thompson and McHugh, 1995). The development of CZM policy networks has not occurred naturally, but has been actively promoted in the UK through the *Coastal Forum* since 1995, and by POKs since 1990 in the Netherlands (see Chapters 4 and 5 respectively).

Policy networks are a means of modelling the relationships that exist between external groups and the government. Jordan and Richardson (1987) developed the theory from work on policy communities in the UK, although it tends to describe relationships between groups and government rather than explain how these affect policy outcomes. Moreover, little attempt is made to distinguish between types of communities, and the term is used liberally as a means of describing all government-group relationships. Richardson and Jordan (1987) classified policy-making in their case studies as consultative, stressing that departments in the UK were always willing to consult a whole range of groups, creating numerous linkages and overlapping memberships of communities. Consultation has advantages for government because it makes policy-making consensual rather than conflicting. By establishing a policy community for CZM for example, government can try to depoliticise a policy area and make it less likely to be politically divisive, at least on the surface. The political quality of networks lies in their influence on commitments to shared understandings, lines of action and the projection of shared values. The networking approach, based around consensus building, also reflects the emerging political climate (see Chapter 4) and provides a

possible solution for those seeking the difficult balance between environmental and development interests.

3.3.3.1 Action Centred Networks.

A development of the flexible, goal oriented planning approach described by policy networks is the Action Centred Network (ACN) model. The ACN is a composite matrix based around an administrative lead and multi-agency steering group that oversees the work of policy networks incorporated within the structure. The ACN requires lead agency that can provide a sustained impetus for the project. Local authorities are best placed to take on this role at the coast because they have sufficient status to convince potential local partners of the importance of the initiative, are publicly accountable locally and are the competent planning authority (see Chapter 4).

Masters (1995) suggests the ACN is best pictured as a flexible committee of representatives from a range of organisations and disciplines, seeking consensus and agreeing the best course of action on a plan. ACNs are particularly characterised by their open and flexible network structure, which allows the multi-disciplinary analysis of issues and is capable of evolving and responding to changing conditions. All participants are also allowed an equal say in the discussion process and there is a strong emphasis on achieving consensus, because the key underlying assumption in the operation of an ACN is that participants ('stakeholders') have more basic aspirations in common than those that separate them. This common cause can be attained through a universal subscription to the goal of 'sustainable use' of the coast.

A key feature of the ACN model, suggested by Carley and Christie (1994) is its operation over a range of geographic and administrative scales. In coastal management this is translated into a series of 'nested' networks from local to regional, national and international levels. This 'nesting' provides a range of networks capable of addressing coastal issues over a range of scales and facilitates both bottom-up and top-down input to the development of policy and practice. Achieving an effective series of 'nested' networks that do not become entangled in individual political conflicts is an important

aspect of coastal zone plan development. Consensus decisions made by an ACN need to be translated into action, and crucial to the initiative's success is that participating organisations are prepared to abide by the decisions of the network and implement policies. This is examined in the case studies, both of which adopt a form of matrix structure when developing management plans (see Chapters 5 and 6).

3.3.4 Models of Governance and Localities.

Local authority power has changed dramatically over the last 15 years, with over 50 Acts of Parliament transforming a fairly uniform system of local government into a more complex one of local governance (Goodwin and Painter, 1996). The concept of 'governance' is broader than that of 'government', recognising that agencies drawn from the public, private and voluntary sectors exert an influence over the pattern of life and economic composition of local areas. These include the institutions of elected central government, QUANGOs, institutions and individuals from outside the political area such as voluntary organisations, private businesses and, increasingly, supra-national institutions like the EU. A substantive shift from government to governance implies not only that these other influences exist, but also that the character and fortunes of local areas are increasingly affected by them.

Governance derives from Foucault's work that proposed a certain *mentality* has become the common ground of all modern forms of political thought and action. Governance is therefore an ensemble formed by the institutions, procedures, analyses and reflections, and the calculations and tactics that allow the exercise of this very specific, albeit complex, form of power (Foucault, 1979). Such political power is exercised through a network of agencies and techniques and thus governance lies both within and beyond the state, residing in complex alignments of many different actors. Foucault's concern with governance derived from his concept of power, and discourse of power and knowledge, which were determined by, and constitutive of power, relations (Murdoch, 1995). Power, in Foucault's terms, is 'decentred' and an analysis of power relations must be shifted away from intentionality (i.e. who holds power?) and those institutions

that are traditionally deemed to 'hold' power (i.e. state agencies) towards the microphysics of power effects.

Political networks, as suggested above, are formed by a multitude of agencies that exercise power; the organisational boundaries of each are breached by the adaptation of shared norms, strategies and interests. A governance based approach allows an in-depth examination of how policy networks are constructed and bound together. This directs attention to the shared discourse norms and rationalities that political actors can mobilise to bind others into their networks. This approach also makes the mechanisms of government visible through making the techniques that construct objects and objectives of government amenable to intervention (Murdoch, 1995). Hence, governance is not simply a discourse but an alignment of various actors, but provides the means whereby governance is achieved because it allows a range of diverse actors to be held in a network.

3.3.4.1 Governance in the Coastal Zone.

The decline of local government power in the UK and the substantive shift towards a more diffuse 'local governance', have further complicated the relationship between the spatial scale of 'the local' and the processes and institutions that affect localities (Goodwin and Painter, 1996). Consequently, while interest in the spatial constitution of political practice tended to be occupied by a concern with 'localities' during the 1980s, more recently it has been interpreted as networks of relations operating over various spatial scales (see Cochrane, 1989, 1993; Stoker, 1989; Murdoch and Marsden, 1995).

The new local governance involves more power being exercised by a very varied range of institutions operating at a range of scales. Governance of local areas is a complex and multi-scale process. Matters are further complicated by the fact that the concept of 'localness' is itself problematic (Goodwin and Painter, 1996). Geographical spaces of whatever size and scale are far from homogeneous and boundaries shift according to the processes under consideration, which the definition of the coastal zone readily demonstrates (see Chapter 2). Across the coastal zone political networks are extensive,

characterised by the existence of a multitude of commercial and leisure interests, environmental groups, local communities and agricultural and other industries. For the activities of the actors to be governed effectively, either the infrastructure of the state must be vast or, somehow, the many actors must be persuaded to enter 'voluntarily' into a kind of contract with the state. Directly expressed, localities must be persuaded to make the aims of governance their own, i.e. to internalise the precepts of governance.

By promoting the co-ordination of CZM through local authority initiatives, the DoE is essentially promoting governance. The government has realised the complexities of establishing a comprehensive statutory CZM strategy and the difficulties integrating central and sub-central responsibilities and actions. Already it is impossible for analysts to standardise or make uniform framings in policy settings, because of the number of advice notes, 'good practice' guides and reports emanating from government, QUANGOs, and pressure groups. Governance, therefore, offers a solution by enabling 'voluntary management' to create local solutions to 'localised' multiple conflicts. Localism is considered a suitable approach for CZM because exploiting governance in the land-use planning system avoids the need to integrate Ministerial responsibilities, redraft planning legislation, or extend local authority responsibilities to encompass marine responsibilities. Policy setting and decision making relies on individuals' analyses of the task to form the principal issue for argument and solution (Tewdwr-Jones, 1995). Similarly, government avoids having to adopt the principles of sustainable development (a defining aim of CZM) that would fundamentally challenge a market-led economy (Owens, 1994). Sustainability requires solutions for conflict between capital and conservation that would be difficult to abandon if uncomfortable economic implications became clear. Placing responsibility for sustainable development with local authorities absolves government's duty to adopt appropriate policies, but it is considered highly unlikely that conflict between conservation and development will be reduced (English Heritage and English Nature, 1993). The result is that CZM will operate at a low cost, which suits the DoE, particularly because it has not made additional resources available to local authorities for the task.

The way in which the economy and environment are conceptualised, if CZM is organised locally, is connected to local conceptions of value with respect to nature and

economic life. When negotiating CZM plans, differing values, policy theories, and ideas are considered, with scientific reasoning being considered alongside moral reasoning and aesthetic sensibility. In this way, values held by local individuals or groups can be drawn into the argument. The problem is that there are many ways in which those involved may conceptualise environmental consideration and give value to them in relation to socio-economic concerns.

3.4 Power and Influence in Decision-Making.

Following the creation of an organisation, interest groups are attracted to it as a means to satisfy their needs or defend against possible goals otherwise developed by the organisation. Organisational behaviour is inevitably a power game in which a group will attempt to influence an organisation's decisions and actions, and do something the group would not otherwise have done (Dahl, 1957). Increasingly, the use of systems of influence (i.e. power) is recognised as an extremely critical variable in organisational design, which describes the micro or internal politics of organisation.

The convergence of economic theory with other social theories means that in analysis policy and practice are considered in a political, rather than economic, context (Rees, 1990). This should counter the problems of market failure previously suffered in planning and managing the coastal zone (see Chapter 2). As each issue is raised for consideration in an organisation advocating multiple goals, various interest groups will attempt to gain support and form temporary alliance with other group members to pursue their goals. The outcomes of conflicts are thus unpredictable, but policy must be based on consensus. Any attempt by a minority vested interest group to dominate the decision process to its own advantage will be thwarted by the majority through the checks built into a consensus-led structure. When viewed from this political perspective, within-agency decision-making is not a neutral activity. The key focus of analysis of changes from *how* resource management decisions are to be made to *who* has the power and influence to make effective policy decisions.

3.4.1 The 'Power Dependency' Model.

While power in organisations has been variously classified (see, for example, French and Raven, 1968; Mintzberg, 1983), such classifications are too individualistic because power is a structural process linked to task specialisation. Power is also only relevant to the understanding of behaviour and organisations when there is conflict (Dawson, 1986). In any multiple-actor organisation each actor makes a unique contribution towards organisational success, but inevitably some departments are viewed as more important than others because those involved in central tasks will have more chance to exert influence (Banner and Gagné, 1995). A number of factors determine a coalition's negotiating power including formal authority and control over resources and information, which enables a coalition to increase control. Power between coalitions may also vary over time, and at any one time there will be a dominant coalition that controls resources and has a high degree of influence. In practice the rational structures of power are more likely to involve networks or coalitions that compete for resources and influence within organisations. Political skills are therefore vital in the process of building alliances and informal networks, which are sometimes termed 'dominant coalitions' (Hickson, *et al.*, 1971).

A theoretical framework for analysing this situation is Rhodes' (1981) 'power dependency model' in which central-local participants manoeuvre for advantage by deploying resources at their disposal (constitutional, legal, financial, practical and information) to maximise their influence. The 'game' takes place in the arena of policy networks, each of which reflects a series of discrete policy, service or area interests within the national local government fields, and draws together the organisations that interact within particular fields. As an organisational-level theory it struggles to capture micro and macro forces of change that more directly influence policy outcomes (Stoker, 1995). It does, however, capture much of the variety and complexity of the central-local relationship as expressed through different types of policy network.

In particular situations, when the government wishes to achieve specific policy goals, and groups wish to influence policy, each is dependent on the other. Power is the result of dependency based on an exchange of resources, so governments and groups have an

incentive to build networks. The dominant coalition retains discretion, however, determining the rules of the game and regulating the 'process of exchange'. The type of network that develops is not always determined by government, which has an interest in developing closed policy communities, but is dependent on the groups involved, the interests of various actors within government, the nature of policy and the institutional arrangements that are available.

3.4.2 Actions of Coalitions Within Organisational Structures.

Within any multiple goal planning model, the organisational structure comprising a collection of coalitions pursuing a common purpose, will possess a core and a periphery. The core, or internal coalition, contains the key actors who establish the rules of the game, determine membership, and the main policy direction. In the periphery, or external coalition, are the groups that abide by the rules, but are excluded from the core and have insufficient resources to exert a continuous influence on policy. The periphery tends to involve groups that are important on particular issues and who have occasional access to the policy process. Whilst membership in an internal coalition is limited, in an external coalition the range of interest groups could be in the hundreds, and constantly changing, with groups continuously entering and leaving the policy arena. Consequently, relationships within and between the internal and external coalitions are highly influenced by the characters of the coalitions and the negotiation strategies employed to achieve consensus.

3.4.2.1 The External Coalition: Special Interest Groups.

The relationship between an internal coalition and external coalition is an important factor in the development of a CZM plan. The major task of the internal coalition is negotiating a compromise between multiple organisations' conflicting aims while focusing on the agreed goals of a plan. This is compounded by the number of special interest groups that might be incorporated into the implementation process in order to ensure the plan's success. The internal coalition must consult widely from the external

coalition and incorporate their wishes into the final plan, but in a CZM issue network it is unlikely that there will be a consensus owing to the diversity of interests competing for control over coastal resources (see Chapter 2).

Influence stems from the way many environmental groups have cultivated their non-partisan, responsible, expert and helpful image. Special interest groups may act out of private concerns or take it upon themselves to represent what is believed to be the public interest. Rees (1990) noted that at the local level it is extremely difficult to dissociate any disinterested commitment to environmental quality from the natural desire of individual groups to protect their own 'positional goods'.

Interest groups can also act as a surrogate for wider public opinion at the local level, which the internal coalition can exploit to reduce the costs involved in broadly based consultation exercises. Interest groups counteract the generally low levels of response obtained from such consultations. Consequently, over time they have tended to build up a mutual support system with professional planners, who often share their values and operations, rather than confront local planning authorities. Consequently, groups achieve an 'established' status as part of the 'insider' network of contacts that is consulted at the plan formulation stage, and are given prior warning of planning applications and planning agendas. In return they tend to avoid 'rocking the boat' because publicity means conflict and loss of contact (with central power) and credibility.

Groups outside the consensual arrangement are forced to adopt a confrontational tactic to pursue their aims. At the local level, however, such confrontational groups tend to be ephemeral, created to fight specific proposals and folding once the battle is won or lost. When they are established, however, they form a far more powerful group and as with many environmental management issues, land ownership is a highly influential negotiating position. Whether the interest groups have an 'insider' or 'outsider' status, it has to be recognised that amenity groups can only be effective if local government has real power to determine policy. Policy discussion within the external coalition is likely to be highly political with numerous problems and solutions existing within the policy domain, which contradicts Richardson and Jordan's (1987) hypothesis that consultation depoliticises the policy arena. Local government's powers are constrained by the

land-use planning system having a right of appeal to allow central government to intervene in order to bring local decisions into line with national policy.

3.4.2.2 The Internal Coalition: Meritocracy and Political Arena.

The internal coalition is composed of a variety of independent groups, each exercising a degree of political power in an attempt to achieve its own aims. The composition of individual interests at the centre will dictate the focus of the organisation and has a crucial impact on the structure of any plan, in terms of those management objectives selected and prioritised. In the UK, for example, the DoE has nominated local authorities to act as 'lead agencies' in the generation of CZM initiatives, which will focus the development of management policies through the statutory planning system. A central grouping of representatives from 'senior' organisations may also act as a 'strategic apex', ensuring that the coalition performs its mission effectively while remaining aware of the political complexities (Papandreou, 1952). This group can also determine the coalition's approach towards deciding policy outcomes, which in terms of CZM are principally the professional meritocracy and a political arena.

The key condition creating a meritocracy is the need to do complex work that requires a high level of expertise. This focuses power on those with the technical skills and knowledge critical to success of the organisation. Power allocated on the basis of expertise also tends to be fluid because what is critical to an organisation changes through time. Loyalty to the organisation tends to be weak because experts are usually loyal to their professional societies (or the employers they represent). Integration of representatives' efforts is therefore achieved through extensive mutual adjustment, although the abilities of the different professionals vary and bodies of expertise inevitably overlap, which can create areas of conflict. The professional internal coalition can become an arena for political strategies, but is ultimately kept in check by professional competence, which ensures power is held by those most suited to solving the problem (Mintzberg, 1983).

In contrast, the political arena is characterised by conflict. Pressures are imposed on the internal coalition from the outside, and political games abound, particularly those that pit alliances against each other (Banner and Gagné, 1995). Pfeffer (1981, p. 7) defined politics as "those activities taken within organisations to acquire, develop, and use power and other resources to obtain one's preferred outcomes in a situation where there is uncertainty or dissensus about choices." Unless organisational goals and criteria are universally shared among all participants in the organisation, however, the use of power and influence in the pursuit of special interests instead of universal interests is inevitable. At best the organisation attends to a large number of issues and personal goals in sequence, but at worst it expends all its energies in political bargaining and achieves nothing. With no focus of power and where conflict dominates, power is allocated to whoever happens to win any of the political games running concurrently in the internal coalition. Insiders are guided by their personal needs and the pressures of their own groups and all political means are used to the fullest, especially privileged information and access. While some political arenas are short lived and characterised by intense conflict, others are longer lasting and characterised by more moderate conflict. This situation can endure when the conflicting demands placed on it cannot be resolved and none will abate.

3.4.2.3 'Win-Win' Conflict Resolution within the Internal Coalition.

In consensus driven planning, the internal coalition strives for 'win-win' resolutions between conflicting interests, which avoid the defensive negotiating tactics of traditional conflict resolution strategies. Such an approach does not mean that both parties *get all* they want, but instead means that both feel the final resolution is acceptable. A number of 'generic strategies' can be used to achieve 'win-win' outcomes, and particularly applicable to an internal coalition characterised by a meritocracy or political arena is altering the issue in dispute. In principle, an issue over which there is disagreement is 'altered' so that the conflict can be re-framed in a manner that encourages resolution, for example by dividing or fractionating it into smaller issues and resolving the overall dispute incrementally (Miles, 1980). Fractionating makes it possible for one party to concede on a small issue without feeling that the contest is lost. Piecemeal settlement

recognises that not everything can be done immediately and that a slow, sequential approach allows for more compromise and win-win outcomes (Banner and Gagné, 1995). Given the complexities that can arise in coastal planning and the diversity of organisations involved, fractionating and operating a win-win strategy are the most effective strategies to achieve effective CZM plans.

3.5 Conclusion.

The majority of CZM interests lie outside the statutory planning system and the conventional sectoral approach to planning only provides limited scope for managing the coastal zone. Sagasti (1988) suggested modern planning issues (such as CZM) would be better served by enlarging the scope of decision-making beyond the traditional centralised approach to individual user groups at the local level. Such an approach would transcend the traditional technocratic approach to planning, with its associated failings. The difficulty of designing such a multidisciplinary organisation, particularly for central government, has been avoided by promoting CZM as a local authority led, non-statutory, initiative (see Chapter 4).

By promoting CZM at a local authority level, however, it is also possible that the DoE is trying to isolate itself from criticism over the inadequacies of British coastal planning. Moves by central government to promote public participation at a local level divert lobbying pressures away from the fundamental policies of economic development, transport, energy, agriculture and housing onto QUANGOs (like English Nature) that have small budgets, little power and limited policy-making initiative (Rees, 1990). Rees (1990) believed an outcome of this approach was that environmental interests have only been able to tinker at the margins of policy formulation and enforcement practice, and have had a relatively minor impact on the substance of policy. The underlying policy direction is still towards exploitative resource development and material growth. In an important sense this powerlessness of environmentalists, or any other group seeking to promote their interests is inevitable given the momentum of established political, social, legal and economic institutions. Consequently, government avoids having to consider developing statutory coast-wide development and conservation policies and plans. This

interpretation supports the main hypothesis of the thesis that UK CZM succeeds only in achieving multidisciplinary groups led by local authorities to develop land-use management plans with a coastal location rather than integrated CZM plans.

Nevertheless, government's focusing of CZM at a local level, in order to encompass all relevant interests and incorporate management issues excluded from the statutory planning system, is supported by current planning theory. As a practical approach, CZM is most usefully understood as an outcome of government action, organisational structures and social processes. Using these theoretical bases the thesis considers the development of coastal planning in the UK and how the concept of CZM might continue to be developed with those local authorities given the task of developing local coastal planning initiatives. There are, however, a number of potential problems associated with such an approach in application, which undermine CZM's potential to organise sustainable coastal management, and which will be examined in the following case studies. This comparative analysis is achieved by considering case studies from the UK and the Netherlands.

Local authority led CZM initiatives are designed to enable interest groups to negotiate policy outcomes best suited for the local coastal zone, and might be modelled according to current organisational theory. The professional dominance of the meritocracy, however, and the tendency for bureaucracies to retain their monopoly over information, make it especially difficult to curb agency independence, which excludes minority interests. The most important aspects of such an approach, therefore, are the composition of the internal coalition and the way in which power is organised and exploited by groups within the organisational structure to achieve their individual aims. Boehmer-Christiansen (1994), for example, suggested that political élites without the capacity for corrective, effective control are most likely to deny significance to an environmental threat. They may promise action and engage in symbolic gestures without providing any practical instruments and resources for achieving proclaimed goals. Key to the analysis of case studies, therefore, is identifying who designed the policy planning group and which organisations are represented in the internal and external coalitions. Those politically active and potentially embarrassing groups could be co-opted into a consultative role that would reduce the group's freedom to challenge

policy openly. In spite of their willingness to contribute to the consultation procedure, the ability to withdraw from a voluntary process before implementation enables interest groups to retain political power, but enhances their negotiation strength and willingness to participate.

In a complex milieu such as the coastal zone the exclusion or coercion of particular interests during policy development could potentially render formal policy-making little more than of symbolic value. At best, some official policy statements could be seen as pious hopes or long-term aspirations; at worst, they could only be interpreted as a token gesture, designed to diffuse political conflict, without making any real change to the status quo. The practical implementation of government coastal policy, examined through case studies, will identify if the DoE can hope to achieve any more than this.

Chapter Four. Development of CZM In The UK.

4.1 The Coastal Planning Framework.

Concern for the deteriorating quality of UK's coastal zone has identified weaknesses and anomalies within the statutory planning system and those regulatory mechanisms related to the management of coastal issues that inhibit the effective integration of planning and management of the coastal zone. A wide variety of government departments have policy and executive responsibilities in the coastal zone (Table 4.1), which are divided among three administrative systems, i.e. land-use, the sea bed and the sea. MAFF, for example, leads on fisheries issues, coastal defence and regulating the deposit of substances or articles at sea. The Department of Transport has responsibility for ports and the safety of shipping; the Department of Trade and Industry administers licensing procedures for oil and gas exploration and production. Finally the DoE has a range of policy interests including the conservation of habitats, water quality issues and, on the landward side, responsibility for the development control system (Holgate-Pollard, 1996).

Through development plans and control of development, the planning system is an important instrument in determining how the coast is developed and conserved (DoE, 1993b). From a statutory and administrative perspective the UK possesses a powerful system of land-use control that has the potential to ensure that uniform, comprehensive and stringent measures can be taken to prevent the expansion of undesirable developments and to discontinue existing uses (Mitchell, 1982). The planning system has, since 1947, effectively arrested the spread of piecemeal development along scenic and undeveloped coastline. The current hierarchical approach is, however, almost exclusively limited to terrestrial areas, is sectoral in approach and lacks a regional planning perspective for the coast (Huggett, 1995). Each administration's responsibilities, for a wide range of activities, directly affect the ability of CZM to provide sustainable and holistic management (Lee, 1993). There remains no comprehensive law concerning coastal management and no explicitly 'coastal' component to statutory land-use planning.

Table 4.1 Government Departments and Agencies with Policy and Executive Responsibilities in the Coastal Zone.

Alkali and Radiochemical Inspectorate
Cadw (Wales)
Countryside Commission Countryside Council for Wales
Crown Estate Commissioners
Department of Agriculture (Northern Ireland)
Department of Economic Development (Northern Ireland)
Department of the Environment
Department of the Environment (Northern Ireland)
Department of National Heritage
Department of Trade and Industry
Department of Transport
English Heritage
English Nature
Environment Agency
Foreign and Commonwealth Office
Harbour Authorities
Health and Safety Executive
Historic Scotland
HM Customs and Excise
HM Inspectorate of Pollution
Home Office
Joint Nature Conservation Committee
Local Authorities
Ministry of Agriculture, Fisheries and Food
Ministry of Defence
National Governing Body of Sports
Natural Environmental Research Council
Royal Commission on the Historic Monuments of England (and equivalents in Scotland and Wales)
Regional Tourist Boards
River Purification Authorities (Scotland)
Scottish Natural Heritage
Scottish Office Agriculture and Fisheries Department
Scottish Office Environment Department
Sea Fisheries Committees
Sports Council
Trinity House
Welsh Office

Many of the complexities and anomalous features in the present administration of the coastal zone are explicable in terms of constitutional history and may be traced to the role of the Crown, in the ownership of maritime property. Crucially, local authority boundaries are derived from Parliamentary constituency boundaries terminating at low water mark and the Crown's historic ownership of the foreshore (Lee, 1993). Parish guardians, in the 19th Century, were empowered to levy rates on property in their area for the relief of the poor. The Crown's ownership of the foreshore and immunity from rates meant parish boundaries ended at the high water mark and privately owned structures on the foreshore were exempted from local taxation. To remedy this, parishes were extended to the low water mark by the 1868 Poor Law Amendment Act (re-enacted in the Local Government Act 1972). This resulted in boundaries originally devised to demarcate property being adopted for jurisdictional purposes without taking into account the needs of CZM (Gibson, 1993).

The implementation of CZM in England and Wales is dependent on the law as the principal medium through which administrative policy must pass before it can be implemented by executive action. The law therefore exerts a persuasive influence over the statutory environmental management process. The government has determined that CZM should primarily be a local concern, but current legislation only defines a narrow role for planning in the coastal zone, explicitly development and use of land. Other mechanisms managing (land based) coastal activities are implemented through the statutory planning system, i.e. coastal defence and nature conservation, and thus apply only to a limited area of the coastal zone. Deficiencies associated with the statutory planning system in the coastal zone consequently means that only a restricted number of CZM objectives are achieved (Zetter, 1992).

The following outline of the coastal planning framework in the UK highlights the difficulty of devising a national CZM strategy. In order to preserve the remaining coastal amenity value, particularly where development pressures are greatest, an integrated CZM approach is widely recognised as a solution to the complexities of locally planning the coast. This has persuaded the government that developing such a strategy would be too complex and expensive a task. It has therefore adopted the position that the system operates efficiently and does not require substantial

modification to achieve CZM. Conversely, many sectoral interest groups have argued that for the very reasons outlined below the approach taken for coastal planning and management requires complete overhaul. This chapter therefore considers the development of land-use planning in the UK, with respect to the coastal zone, and the debate over the creation of a CZM strategy as a non-statutory local authority planning initiative. It provides the framework within which to consider the UK case study and compare the Dutch approach to local CZM planning.

4.2 The Land-Use Management Systems and Coastal Planning.

A traditional environmental concern in the UK has been to preserve the cultural values associated with the coast. Within the current system while conservation takes precedence over all other uses along pristine coastline, less aesthetic but equally important coastline is vulnerable to all types of economic use and development. With no specific coastal planning system, the goal of land-use planning is achieved through the town and country planning system that effectively manages environmental change and the control of urban development (Rydin, 1993).

4.2.1 The Development of Land-Use Planning.

The pre-war planning system was ineffective because it was both optional for local authorities and highly fragmented, with over 1,400 local authorities in 1944 (see, for example, Rydin, 1993; Cullingworth and Nadin, 1994). Planning powers were essentially regulatory and restrictive, and without any help from the Exchequer local authorities had to compensate developers for planning restrictions, determined in relation to the most profitable use of land but irrespective of actual future use). Consequently, during the inter-war years burgeoning house building, industrial expansion and associated commercial areas spread over large parts of rural Britain, unfettered by the land-use panning system. From 1927 to 1939, for example, there was an annual average loss of 25,000 hectares of open land (Rydin, 1993). In response to this loss of countryside a number of societies were formed including the Youth Hostels

Association (1921), the Council for the Preservation of Rural England (1926) which became the Council for the Protection of Rural England (CPRE), and the Ramblers Association (1935).

The coast first became an area of policy concern for local authorities in the 1930s because the expanding needs of the holiday maker conflicted with the desire to protect coastal amenities. In 1938, the growing pressures on the coast led the CPRE, National Trust, and Commons, Open Spaces and Footpaths Preservation Society, to form a Coastal Preservation Committee. The Committee stressed that it was the moral duty of each generation to preserve 'the precious heritage of the coast'. In 1939, a survey by the British Institute of Public Opinion recorded that 45 per cent of holidays were spent by the sea (Public Records Office (PRO), HLG71, 772). The number of holiday makers was expected to double to 30 million people in the post-war years as more of the national work force were entitled to holidays with pay under the 1936 Holidays With Pay Act.

The exploitation of the coast was exacerbated by more remote beaches becoming accessible to motorists, that were no longer confined to traditional resorts served by the railways. Sheail (1976, p. 258) described how "huts, caravans, old railway carriages and bus bodies were often placed along the coast without any consideration for water supply, refuse disposal, access or design." With insufficient planning power under the town and country planning system to control such development, local authorities had to rely on bylaws to tackle threats to the coastal amenity. Bylaws, however, could only be directed at the individual holiday maker and so achieved very little. This only served to highlight the ineffectual nature of town and country planning, unable to regulate piecemeal urban settlement and holiday-resort expansion.

In 1937 a motion was passed in the House of Commons that urged the government to ascertain whether further planning powers were needed at the coast (Hansard, 1937). The Minister of Health subsequently asked the Town and Country Planning Advisory Committee to investigate the situation and the Coastal Preservation Committee was then enrolled in the task of questioning every maritime local authority. Approximately 65 per cent of all authorities responded, and reported an extremely slow rate of progress in

drawing up planning schemes, negotiating voluntary agreements with landowners, and in acquiring open space for recreation (PRO, HLG52, 553). As a result the Ministry concluded that those local authorities without a coastal planning scheme should be placed under greater pressure to develop a plan so that every tract of coastline would be included in a scheme (PRO, HLG52, 550). In 1938 the Ministry of Health issued Circular 1750 to maritime local authorities, which emphasised the need to control development, to preserve the natural beauty of the coast whilst also allowing development where appropriate. It also promoted the need to provide public access to the coast and the shore. This was to be achieved under existing legislation through designating the most important coasts as 'Coastal Zones', where all development would be subject to planning control (Sheail, 1976). This early attempt at CZM was never destined to succeed. Attention was being directed to the possibility of an outbreak of war by 1939, and the promotion of Coastal Zone development planning was therefore very low in Treasury priorities.

The outbreak of World War II provided local authorities with a unique opportunity for redressing the increasing coastal sprawl of the 1930s and had an indirect benefit on the British planning system. Indefinite and irredeemable expansion of development along the coast was curbed. It was also realised that with intervention, local authorities could regulate the multiplicity of small-plot holders and greater attention could then be given to the renovation of traditional resorts and the overall coastal amenity.

In September 1942, regional planning officers of the Ministry of Works and Planning were asked to organise surveys of the optimum uses of their coasts. The Ministry realised that excessive expansion of post-war holidays would threaten that coast yet unspoilt and concluded that priority should be given to coastal preservation as a separate planning issue should Exchequer aid become available (Sheail, 1975). During these surveys local planning officers were consulted (especially those in county councils), as were local representatives of the CPRE and other voluntary bodies. As a result it was possible to assess the national distribution and regional significance of the various kinds of coastal development. This initial survey was followed by Steers' review of the coast's preservation and amenity potential on behalf of the Ministry of Town and Country Planning. The Ministry had assumed responsibility for co-ordinating the

planning of the 'physical environment' from the Ministry of Works and Planning in 1943 (Cullingworth, 1990).

Between June 1943 and April 1945, Steers undertook an inspection of the entire English and Welsh coastlines, and the results were presented to the Royal Geographical Society.[3] Steer's findings revealed the degree of piecemeal development that had occurred during the 1930s, to the detriment of the coastal environment, which highlighted the failure of the land-use planning system to regulate and protect the environment adequately. The development and exploitation of the coast were primarily due to industry, tourism and recreation.

Steers (1944, p. 11) described how "scarcely any part of the [Durham] coast has escaped disfigurement by a coal-tip, shaft, winding-gear, or associated ugly mining village." Likewise, those developments along the Northumberland, Cumberland, Flintshire and Cornish coasts had happened in a manner that was "symptomatic of indifference to the beauty of coastal scenery." The location of *ad hoc* holiday developments was similarly cavalier. Steers (1944, p. 11) described how "the Holderness coast affords many examples of shocking desecration, and parts of the Essex and the south-east are notorious for it" and "miles of the Lincolnshire and Norfolk coasts are disfigured by long lines of jerry-built erections." That the coastline had been developed so was 'hardly accidental' in Steers' opinion, with unregulated building leading to serious overcrowding, bad sanitation and the very serious ruination of parts of the coastline due solely to the lack of any effective planning control.

Steers (1944, p 12) recommended that, to protect unspoiled coast and restore badly developed areas, "the coast should be regarded as a unit", while noting that there could be no rigid conception of its boundaries. It was also recommended that, "All coastal problems should be under the review of the Ministry of Town and Country Planning, which should have effective powers so that it could take decisive action if necessary" (Steers, 1944, p. 16). Steers conclusion was that it was time to plan new legislation and put into effect a systematic planning policy that would prevent a relapse into past errors.

[3] Steers undertook a similar survey between 1946 and 1953 for the Secretary of State for Scotland.

The work of the Coastal Preservation Committee and Steers' surveys had revealed the nature of development along the coast was a cause for national concern. Implicit within this concern was that the town and country planning system was wholly inadequate in its consideration of planning the coastline. The Minister of Town and Country Planning, responding to Steers' recommendations, agreed that, "The coast as a national possession must be planned nationally, but that national action must not overrule local concerns or impair local initiative" (Steers, 1944, *endnotes*). The government appeared prepared to take a proactive and interventionist role in coastal matters, through assisting local planning authorities developing coastal planning schemes. The Minister identified that the keynote of coastal planning policy, which the Ministry was endeavouring to apply, was a partnership of national and local effort, and between central and local planning authorities. At the same time the concepts of a national planning authority and coastal zones were introduced. In 1945 the potential therefore existed to create an integrated coastal planning system, administered by a national authority, dealing locally with all matters relating to identified coastal zones. Had such an approach been adopted towards coastal planning at this point in the UK, it would have been placed in a framework that is described by modern interpretations of CZM. The 1947 Town and Country Planning Act, however, failed to take the opportunity to consider the coastal zone as a single administrative unit, which secured the coast's position on the periphery of the current planning system.

4.2.1.1 The 1947 Town and Country Planning Act.

It is unlikely that a radical reform of the planning system would have occurred in the absence of the wider movements of change established during the 1940s (Cullingworth, 1994). The war effort required a greater level of state intervention and planning in controlling industrial and agricultural production, than was previously acceptable. Following the war there was a general acceptance that to re-establish the economy and reconstruct society there was a similar need for overall control (Greed, 1993). It was accepted that urban sprawl should be restricted in the countryside, with overspill steered into new and expanded towns. The problems of reconstructing blitzed cities, securing a

'proper distribution' of industry and developing national parks all highlighted the need for a more positive strategic role for central government (Cullingworth and Nadin, 1994).

The 1947 Town and Country Planning Act corrected the inadequacies of the previous system, and planning ceased to be merely a regulatory function. All development, broadly defined in the 1947 Act but excluding agricultural development, was to be subject to development control for which prior planning permission needed to be obtained from the local planning authority. Development plans were to be prepared for every area in the country by county councils, rather than by the districts,[4] to outline the way in which each area was to be developed or, where desirable, preserved. Development rights and the associated development values were effectively nationalised. Compensation for those rights was to be paid from a national fund that enabled development to take place only according to 'good planning principles'. This was a departure from the pre-war planning system that was essentially a form of zoning in which the development plan itself created development rights (Rydin, 1993).

Town planning was only one component of a much broader social and economic programme of post-war reconstruction aimed at creating a better, more rationally organised welfare state. Planning became a philosophy of the post-war period seen as the solution to economic overproduction, overpopulation and unruly urban growth in the countryside (Greed, 1993). In 1942 the Scott Report was published, enshrining the principle of protecting rural land and agricultural areas in the planning system. This was supplemented by the Dower Report in 1945 and the Hobhouse Report in 1947, which proposed National Parks in England and Wales to conserve landscape beauty, public access, wildlife conservation, and conservation of buildings or places of architectural or historic interest, as well as agricultural protection. An advisory National Parks Commission was established. The Nature Conservancy was also established in 1949 to provide scientific advice on the conservation and control of natural flora and fauna, and to establish and manage nature reserves.

[4] By nominating county councils as the local planning authority, the total number of local planning authorities was reduced from 1441 to 145.

Unfortunately, the 1947 Act made it difficult to grant coastal preservation a special planning procedure distinct from land-use planning and countryside protection. It was politically impossible for the government to transfer planning powers so recently awarded to the county councils to a new national coastal authority as Steers had recommended. A national authority was never established. Consequently, despite developments before the war "the wartime surveys and debates brought few direct benefits for coastal protection" (Sheail, 1976, p. 269). The 1947 Haseley Committee, which contributed to the establishing of Nature Conservancy, had concluded that there were no fundamental conflicts between access for amenity considerations and wildlife interests, and the promotion of both aspects could be encouraged. This conclusion shaped the next fifty years of countryside planning and management policies and the coast was essentially ignored as a planning issue. The case for coastal conservation then had to wait until the 1960s before positive action was taken to safeguard it. Paradoxically, however, comprehensive land-use and development planning successfully restricted sporadic developments and protected the undeveloped coast in a way, since described, as one of the 1947 Act's major successes (Zetter, 1992).

An original aim of the 1947 Town and Country Planning Act was to prevent the consequences of urban sprawl and the loss of agricultural land and countryside amenity along scenic coastline. Consequently, the planning system may be considered to have successfully protected and managed coastal landscapes, but through general countryside protection rather than focused legislation. Town and country planning exists as a major bureaucratic function of local government, regardless of its theoretical underpinning (see, for example, Healey, *et al.*, 1988; Greed, 1993). Grant (1992) describes the current system, based on the 1947 Act, as administratively cumbersome and highly complex, with voluminous legislation, heavy case law, and masses of policy statements, guidance notes, development plans, regulations, circulars and other guidance. In addition, political forces, professional attitudes and management styles all affect the ways in which the system operates (Cullingworth and Nadin, 1994).

4.2.1.2 Revisions to the Coastal Planning System.

Under the 1968 Town and Country Planning Act significant changes were made to the rather inflexible development plans of the 1947 Act. The reform led to a series of national policy statements issued as circulars and a two-tier planning structure. County councils prepared Structure Plans, to carry through the regional policies to county level, and district councils developed Local Plans to carry through the policies for development control in localised areas (Rydin, 1993). Countryside protection was also revised through Countryside Acts (Scotland, 1967; England and Wales, 1968), which introduced a duty to consider the desirability of conserving areas of natural beauty and amenity.

During the drafting of the 1968 Act, the Ministry of Housing and Local Government issued two circulars (56/63 and 7/66) that requested local authorities to prepare special policy statements identifying underdeveloped coast whose beauty merited protection. The circulars also required local authorities to consider the potential impact of proposals on areas of scientific interest. While most councils were preparing reports, the Ministry issued a further circular in 1966 entitled *The Coast*. This called for more clearly defined policies and for better co-ordination between the plans of different authorities, as well as for fuller information about the nature and extent of the demands on the coast (Sheail, 1976). The outcome of council reports and Ministry action was inconclusive, however, with no specific coastal planning legislation being introduced by the 1967/68 Countryside Acts. The reformed land-use planning system similarly failed to consider coastal management issues directly, in spite of almost 30 per cent of the coastline having some form of special designation by 1963, while lacking a cohesive management policy (Williams, 1987). Consequently, coastal planning was firmly re-established on the periphery of the statutory planning system as a series of sectoral development issues, as it had been under the original 1947 Act.

Prompted by concern over the lack of commitment to coastal preservation, the National Trust launched its "Enterprise Neptune" campaign in 1965. The campaign's aim was to raise money to purchase special areas of the British coast for the Trust as and when they were put up for sale. Once in National Trust ownership, land could be declared

'inalienable' and protected from development in perpetuity. When the feasibility of purchasing extensive tracts of coastline for preservation was first suggested in the 1930s the Ministry of Health was very sceptical (Sheail, 1976). Enterprise Neptune, however, was very successful. When the campaign started in 1965, the Trust owned 187 miles of coastline. Within two years the campaign raised £1 million, and by 1973 the original objective of £2 million was achieved. With these funds the Trust now had 338 miles of coast in its care (National Trust, 1993). By 1992 the National Trust held 530 miles and the appeal had raised £17.5 million. It is noteworthy that, in 1944, Steers had written, "How far the nation's debt to and reliance on the National Trust will increase remains to be seen."

In 1966, the National Parks Commission began a study of coastal preservation through a series of regional conferences, which culminated in two reports *The Planning of the Coastline* and *The Coastal Heritage*, in 1970. The study aimed "to provide a firm foundation for long-term policies for safeguarding the natural beauty of the coast as a whole and promoting its enjoyment by the public" (Ministry of Housing, 1966). The Countryside Commission (created from the National Parks Commission in 1968) concluded that existing legislation and designations were unlikely to be sufficiently effective for conserving the coastline and suggested a statutory designation for heritage coast sites. Selecting the best examples of underdeveloped coastline of high scenic quality, the Countryside Commission suggested they be designated 'Heritage Coasts' and the concept of a heritage coastline included in development plans (Rydin, 1993).

The 1947 Act had created a general definition of development to be subject to control, but only contained an ill-defined concept of 'amenity'. Consequently, with coastal planning issues considered through this system, central government viewed them as amenity issues of low-priority. Consequently, while the DoE and Welsh Office welcomed the notion of heritage coasts, they refused to accept the statutory designation procedure despite the Ministry of Housing's concern to safeguard the coast's natural beauty (DoE/WO, 1972). The statutory planning system could not easily accommodate planning issues of the 'coastal zone' first recognised in the 1930s. The Countryside Commission's task became one of liaison with local authorities and landowners to establish boundaries and non-statutory management plans for each heritage coast.

Notwithstanding its voluntary nature, however, 34 sites worthy of designation were identified extending along 1175 kilometres of coastline and representing 27 per cent of the total coastal frontage of England and Wales (Williams, 1987).

4.2.1.3 Planning Policy Guidance.

Changes in planning under Thatcherism significantly limited the ability of local authorities to intervene in the planning process (see Chapter 3). The promotion of QUANGOs and the centralisation of planning has seen central government become increasingly involved in local action previously the preserve of local authorities. This resulted in widely different planning styles that conflicted with local government objectives and responsibilities. Correspondingly, localities have become dependent on central government for economic development policy (Elcock, 1994). The net effect of these changes has been the retention of a strong planning system for certain areas, for example, where conservation and environmental factors are considered important, but elsewhere a weakened system. In addition the centralisation of policy-making, and already weak capacity of local planning authorities to perform any sort of co-ordinating role has been further undermined by the institutional fragmentation of planning at national level (Cheshire, *et al.*, 1992). If the coast is a peripheral land-use planning issue, and a jurisdiction in which other activities are independently considered, the potential for integrated CZM was weakened by the centralisation of the planning system in which it was not a priority issue.

In order to promote a national planning perspective, the government issued nine Planning Policy Guidance notes (PPGs) in January 1988 (Tewdwr-Jones, 1994a).[5] Twenty-five PPGs have been issued in either their draft or final formats to provide concise and practical guidance on planning policy issues (see Table 4.2). The role of

[5] Planning policy guidance notes concentrate on the explanation of government policy in substantive areas. The nine original PPGs dealt with: General Policy and Principles; Green Belts; Land for Housing; Industrial and Commercial Development and Small Firms; Simplified Planning Zones; Rural Enterprise and Development; Telecommunications and Strategic Guidance for the South East. Three Mineral Planning Guidance notes (MPGs) were also issued. A full review of DoE policy guidance in 1993 resulted in the revision of many early PPGs. Guidance has also been issued concerning minerals policy (MPGs), derelict land grant advice (DLGas) and regional policy (RPGs).

local authorities planning the coast is considered in PPG20 *Coastal Planning* (DoE, 1992b), which focuses attention on the requirements of co-ordinated planning actions and the interrelation of other planning issues.

PPG20 established a general context for coastal planning policies, advice on policies for developments that require a coastal location, and guidance on how such policies should be reflected in development plans. The coastal zone was described as extending seawards and landwards of the coastline, with limits determined by the geographical extent of natural processes and human activities related to the coast. This was immediately qualified for planning purposes that 'as a rule' the seaward limit of the zone remains the mean LWM. The definition reaffirmed the problem of demarcation, with the existing planning system extending over only part of what is accepted as the coastal zone (Stoker, 1993). The guidance note also identified four types of coastline with a relevance for planning: undeveloped, partly developed, developed and despoiled coastlines. Against this background the three key policy issues of conservation, development, and policies for risk were identified with particular reference to coastal areas. Within all three policy areas, a general emphasis of restraint on development in the coastal zone was stressed unless a coastal location was required.

Local planning authorities were instructed to consider how best to define the coastal zone for their areas, including areas affected by off-shore and near-shore natural processes. Authorities were also required to recognise that on-shore development could often have an impact off-shore, and that this should be accounted for when making planning decisions. Consequently, whilst development proposals below mean low-water are generally beyond the planning system the impact of land based development on the seaward coastal zone is now a 'material consideration'. Within the statutory planning system, this was an important advance in the proper planning of the coastal zone (Stoker, 1993).

PPG20 questioned the ability of local authorities to address more specific areas of development and redevelopment comprehensively. A policy to restore coast damaged by industrial and urban development, mining or waste disposal, was identified. In

Table 4.2. Planning Policy Guidance Notes for England and Wales.

PPG 1	General Policy and Principles 1992 (superseding 1988 version)
PPG 2	Green Belts 1988
PPG 3	Housing 1992 (superseding Land For Housing 1988)
PPG 4	Industrial and Commercial Development and Small Firms 1992 (revised)
PPG 5	Simplified Planning Zones 1992 (revised)
PPG 6	Major Retail Development 1988
PPG 7	The Countryside and the Rural Economy 1992 (superseding Rural Enterprise and Development 1988)
PPG 8	Telecommunications 1992 (revised)
PPG 9	Regional Guidance for the South East 1988
PPG 10	Strategic Guidance for the West Midlands 1988
PPG 11	Strategic Guidance for Merseyside 1988
PPG 12	Development Plans and Regional Planning Guidance 1992 (superseding PPG15)
PPG 13	Highways Considerations in Development Control 1988
PPG 14	Development on Unstable Land 1990
PPG 15	Regional Planning Guidance, Structure Plans, and the Content of Development Plans (cancelled by revised PPG 12)
PPG 16	Archaeology and Planning 1990
PPG 17	Sport and Recreation 1991
PPG 18	Enforcing Planning Control 1991
PPG 19	Outdoor Advertising Control 1992
PPG 20	Coastal Planning 1992
PPG 21	Tourism 1992
PPG 22	Renewable Energy 1993

addition was the aim to balance and reconcile natural beauty with landscape variety, its conservation interest and natural resources with recreational pressures, and to contain the impact of these activities. Stoker (1993, p. 525), however, questioned "whether such goals can really be achieved if the condition and quality of the adjacent seabed and coastal waters beyond low water are not taken into account?"

PPGs are essentially policy and procedural documents that do not distinguish national guidance from national policy. Owing to the previous lack of national statements concerning land-use planning they have assumed the role of policy directives rather than advisory statements. PPGs are recognised as important sources of government policy and are closely followed in development control and development planning although they are not an authoritative interpretation of planning law. Recent PPGs have been criticised because they are considered vague in content, and do not provide a clear indication of the action that should be followed in any particular case. Likewise, in terms of coastal planning, advice from PPGs contradicts one another, as a result of piecemeal revisions at different times. Consequently, local authorities attempting to formulate effective policies have felt constrained by the guidance offered in PPGs and intimidated by the intervention of central government. Other criticisms focus on the limitations imposed by a lack of resources, poor organisational links between development control and forward planning, and the use of wider infrastructural policy initiatives that have resulted in development plans lacking the necessary teeth to prove workable (Tewdwr-Jones, 1994b). Nevertheless, they are an influential form of guidance and exert considerable influence in planning policies and on procedural issues because there has been a general concern among local policy-makers to conform to the wording of PPGs (Tewdwr-Jones, 1994a).

4.2.1.4 Coastal Planning in Transition.

The present system of planning is based in the 1990 Town and Country Planning Act (as amended) and the 1991 Planning and Compensation Act. The 1991 Act established a hierarchy of planning policy at national, regional and local levels, each level contributing something distinctive to policy expression (Tewdwr-Jones, 1994b). These

Acts have been welcomed by planners as marking an end to government's 'anti-planning' attitude. Whitehall's desire now is for a coherent planning system from the national planning guidelines down to the locally determined development plans, with a publicly accountable development control system, meeting performance targets (Tewdwr-Jones, 1996).

The planning system is identified as the principal mechanism for regulating land-use and achieving environmental objectives (DoE, 1992, PPG7). Whatmore and Boucher (1993) consider that planning represents an important institutional terrain for contesting the meaning and relations of the 'natural environment'. The land-use planning system is thus a key regulator of environmental boundaries and transitions. It formalises the separation between nature and abstract space through the written codes of legal statute and professional conduct that impose a site-based, rather than system-based, narrative structure on its treatment of the environment. This interpretation of the planning system describes the weakness of CZM in the present planning system because the coastal zone is strategically represented as a series of discrete elements, rather than as an integrative system of relationships, and much of it lies beyond the statutory system's scope. Coastal planning has been fragmented and marginalised in the evolution of planning procedures and protocols better suited to discriminating between particular environmental features. Coastal planners are therefore likely to encounter difficulties, particularly when trying to deal with the dominant economic agenda and the emerging environmental agenda.

Owens (1994) considered it important not to overstate planning's role as an instrument of environmental policy. Planning is constrained within and by economic forces and priorities on a wider stage. An important locus lies outside the planning system, legitimised and encouraged by PPGs, in environmental reappraisals of Development Plans and management plans developed by local authorities (Wilson and Reamakers, 1992). The negotiating skills of planners, and the role of conflict mediation the system has traditionally adopted, is well suited to coping with the adoption of environmental concerns (Rydin, 1993). Planning advice assumes that an 'open and democratic procedure' will lead to policies and decisions favouring conservation. Environmental attitudes vary between social groups, however, particularly in complex areas like the

coast, and if conservation values are not widely shared conflicts can occur. The government has emphasised the benefit of trade-offs between economic and environmental policy goals when seeking solutions. Though the DoE concedes that, "There are times when a feature of the environment needs to be treated as inviolable" (DoE, 1993a, para. 1.8). According to Healey and Shaw (1994, p. 432) this action suggests "the DoE is seeking to take control of the environmental agenda and to define it in technist terms."

The environmental policy momentum is currently in the administrative and professional arena. Healey and Shaw (1994) feared that the 'professionalisation' of environmental discourse is separating the agenda from its popular support and ability to maintain leverage, when, locally and nationally, hard choices have to be made. Traditional planning methodology has typically been judgmental rather than calculating, drawing more on legal forms of argument than economic ones (See Chapter 3). By considering concepts like environmental trade-offs, the language of planning will change from legalistic forms to a calculative economic-based discourse. Consequently, there is the possibility that in coastal zone planning multi-disciplinary negotiations will dilute and undermine conservation aims (see Chapter 6).

4.2.2 Additional Coastal Planning Mechanisms.

Coastal planning and management are not synonymous. Planning relates to the operation of the land-use planning system that predominantly focuses on the economic development of a plan's area, while management encompasses all issues impinging on the coast in its entirety irrespective of its economic development potential. Such is the strength of the town and country planning system, that almost all other aspects of coastal environmental management are applied through the statutory planning mechanisms and its jurisdictions. Consequently, the weaknesses of the system's ability to plan for the entire coastal zone, is experienced by other mechanisms, including nature conservation and coastal defence.

4.2.2.1 Wildlife Conservation in the Coastal Zone.

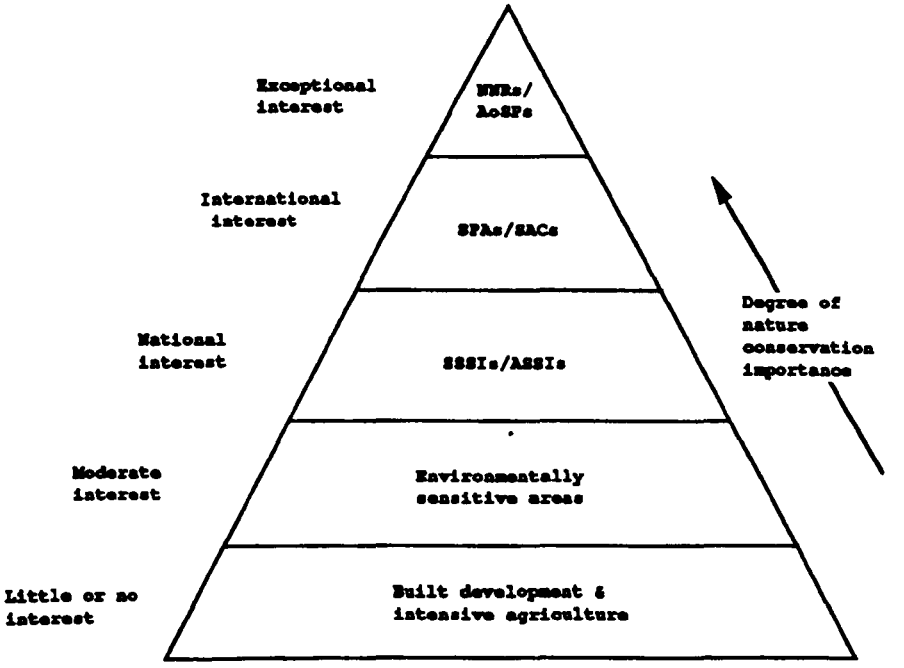
The importance of wildlife on the coast varies, which is reflected by the tiered approach to site protection (Figure 4.1). Areas of moderate conservation value may, for example, benefit from the Heritage Coast landscape designation or be designated Environmentally Sensitive Areas (ESAs). There are 15 ESAs that include coastal areas, but such designations are largely restricted to terrestrial habitats (as are Heritage Coasts) and may not address the whole coastal zone (Huggett, 1995).

The cornerstone of habitat protection and nature conservation is the 'Site of Special Scientific Interest', which indicates a site of national and international importance. Internationally important sites, classified as SPAs under the Birds Directive and/or as SACs under the Habitats Directive, are also notified as SSSIs. The designation therefore identifies those key areas where nature conservation should be the primary objective of site management (DoE, 1994). By 1989 140 estuaries were notified as SSSIs; representing approximately 74 per cent of the national estuarine area (Davidson, *et al.*, 1991). By July 1994 36 per cent of estuaries that qualified had been classified as SPAs (Huggett, 1995). They are protected from potentially damaging actions by their owners and occupiers unless *inter alia* these actions are given planning permission. Although legislation is not explicit it is assumed that SSSIs can only be designated inside planning authority areas (Gibson, 1993). Unfortunately, this also links nature conservation to the intrinsic weaknesses of the planning system, which means SSSIs are restricted to terrestrial and intertidal habitats and are inapplicable beyond the low water mark. Hence they are unable to address site protection across the whole coastal zone.

4.2.2.2 Coastal Defence.

One of the most serious failings of the planning system is the lack of co-ordination between land-use planning and coastal defence. The administration of 'coastal defence' includes coastal protection and sea defence, and involves a number of authorities.

Figure 4.1 Tiered Wildlife Site Protection at the Coast.



The hierarchical approach to nature conservation and site protection in the UK. As the degree of nature conservation importance increases, the area covered by the respective site designations decreases

Source: Huggett, 1995, p. 11.

Coastal protection is the preservation of land against erosion and encroachment from the sea, and is undertaken by maritime and metropolitan borough district councils. Sea defence is the guarding against flooding and inundation, and is the responsibility of the EA (NRA), internal drainage boards and maritime district councils. The distinction, although somewhat arbitrary, arose through the historic division of responsibilities which was corrected in 1985 when coast protection was transferred from the DoE to MAFF (Davidson, *et al.*, 1991).

Many parts of the coast suffer from an inheritance of unplanned communities and developments built before planning control was established (described by Steers, 1944). Previous defence schemes have had detrimental impacts on adjacent sections of coastline because no account had been taken of the action of geomorphic processes. Many problems have arisen as a direct result of a piecemeal approach that ignored natural processes. This was exacerbated by the large number of bodies involved (as landowners) in coastal defence works and the numerous local authorities that still lack specific policies for development in flood risk areas or landslide prone areas, despite planning policy guidance from government.

MAFF is responsible for making grants available for flood and coastal defence works to the appropriate authority, but has no power to direct one scheme's undertaking in preference to another. Consequently, the issue of coastal defence is becoming increasingly politicised between communities whose houses or livelihood is affected, and the local authority responsible (Lee, 1993). From a CZM perspective, land-use policies and coastal defence strategies need to be co-ordinated more closely and the inability effectively to create a coastal land-use strategy is a major inhibiting factor in CZM development. Presently, no clear (statutory) mechanism exists for achieving co-ordination, relying more on voluntary and *ad hoc* co-operation (Lee, 1993).

4.2.2.3 Private Planning Acts and Bylaws.

Beyond the statutory planning system Private Acts and local Bylaws are used to plan specific activities in the coastal zone. Private Acts provide authorisation for

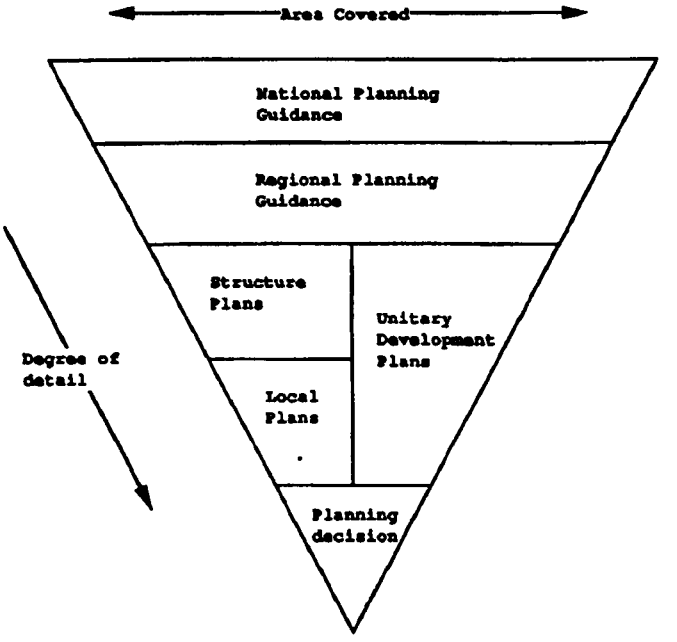
development proposals that usually straddle or are sited below the low water mark. As a result they have been important instruments in facilitating the development of ports and harbours because any structure placed below high water requires statutory authorisation (Lee, 1993). Bylaws provide regulations to control certain activities in specific areas, and can be made by statutory organisations (including the Environment Agency, harbour authorities, Sea Fisheries Committees), local authorities and the National Trust. They represent a potentially important mechanism for the regulation of recreation and development across the low water mark. Local authorities, for example, are able to regulate activities such as navigation and the speed of traffic up to one mile offshore.

The number of bylaw-making authorities and the number of bylaws concerning activities related to specific localities has resulted in a system that is hugely complex, inconsistent, and ineffective. The process of enactment is also slow, taking up to three years for a proposed bylaw to become effective. Bylaws, however, are recognised to be one way in which local authority jurisdiction might be extended farther across the coastal zone and the system is currently being reviewed to identify how bylaws might be rationalised and their potential for CZM more effectively exploited.

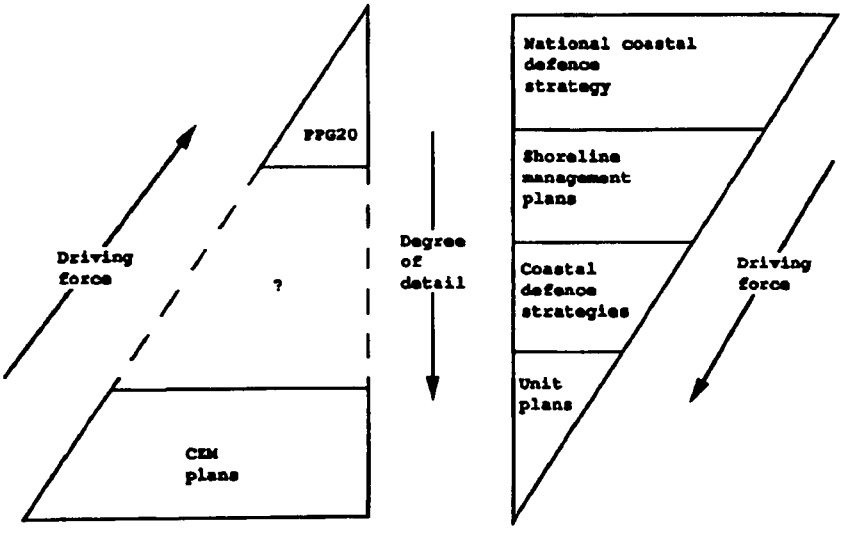
4.2.1.3 Conclusion.

The UK has a very well developed hierarchical planning approach (Figure 4.2). At a national level, government has produced a wide range of sectoral PPGs, all of which are of relevance to the coastal zone, including PPG20 specifically on coastal planning that tries to provide guidance for integrated development planning. National guidance at a regional level is effected in Regional Planning Guidance notes (RPGs), which focus on a particular region, but there is no formal provision for regional coastal zone planning. At a county level, the guidance provided by RPGs is interpreted within structure plans or unitary development plans and ultimately into local plans at the district level. These plans usually involve the zoning of land-use and demonstrate the long history of zoning use within the terrestrial portion of the coastal zone. It also reinforces coastal zone's position on the periphery of the planning issues, and highlights the lost opportunity of Steer's recommendations in the 1940s.

Figure 4.2 Hierarchical Approach to Planning in the UK.



A simplified diagrammatic representation of the top-down hierarchical approach to built development planning in England and Wales. As the degree of detail increases, the area covered by the respective plans decreases



A diagrammatic representation of two approaches to coastal zone planning and management in England and Wales. Coastal Zone Management Plans (left) are developed at a local level and drive policy at a more strategic level. The hierarchy of plans is poorly developed. Planning of flood and coastal defences (right) shows a similar top-down hierarchical approach as built development planning

Source: Huggett, 1995, p. 13.

Other hierarchical sectoral planning systems are beginning to appear, though unlike the development planning system, they are non-statutory. A good example is that of planning coastal and flood defences (Figure 4.3). At the national level, MAFF has published a National Coastal Defence Strategy (MAFF, 1992 a; 1992b) that outlines government policy towards coastal and flood defences. The national strategy is translated at the regional level by Shoreline Management Plans (SMPs). Unlike RPGs these are not based on political boundaries, but deal with defence issues within coastal process cells. SMPs outline the strategic objectives for coastal and flood defence within coastal cells, which then guide coastal defence strategies for smaller areas such as estuaries.

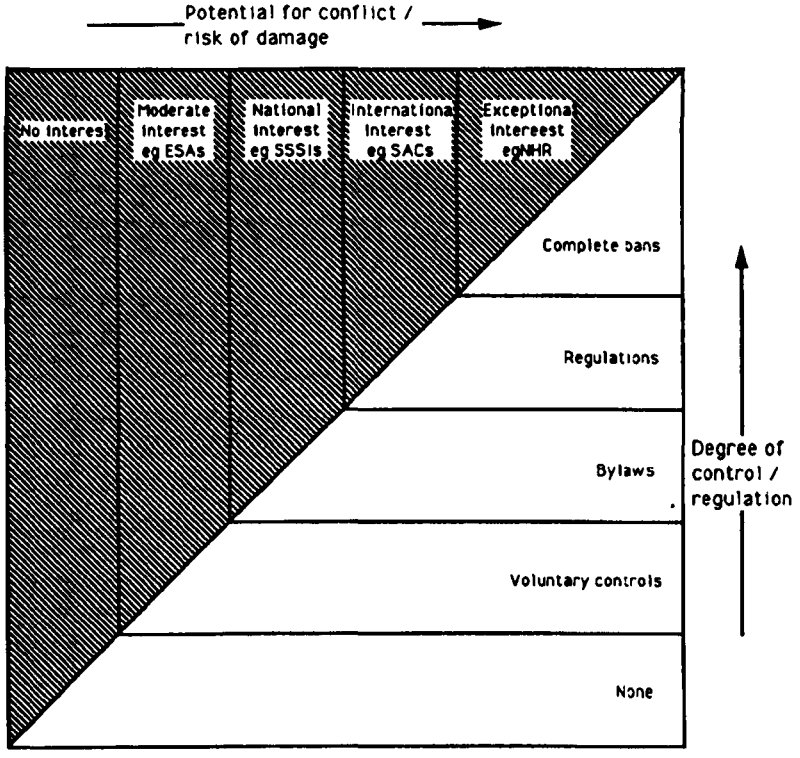
4.3 Planning and Management Below Low Water.

The management of the sea and sea-bed is intrinsically different from terrestrial planning being sectoral and predominantly non-hierarchical. The national and regional regulation of the sea bed allows proposals to be decided in terms of coastal processes or the economy, which is its primary advantage over a structured statutory system (DoE, 1993b). The political division of the coastal zone into two distinct systems, however, presents major difficulties for integrated management of the area. Just as with the terrestrial administrative system, marine management is based on constitutional history and may be traced to the role of the Crown in the ownership of maritime property.

4.3.1 Ownership of the Foreshore and Seabed.

All land has been vested in the Crown since 1066, when only vague grants for coastal estates were issued because precision was neither necessary nor possible over the seaward boundaries of land conveyed. In Tudor and Stewart times the draining of saltmarshes to create new agricultural land led to claims by monarchs that intertidal and subtidal areas had not been alienated and remained property of the Crown. These claims were reinforced in 1760 by George III's surrender of hereditary properties of the Crown to the State in return for income paid by the Civil List (Gibson, 1977). A

Figure 4.3 Hierarchical Sectoral Planning Systems in the UK.



A hierarchical approach to management in the coastal zone. As the risk of damage and potential for conflict between nature conservation interest increases, so the degree of control or regulation should increase. However, since area involved decreases as nature conservation interest increases, so area and degree of regulation will be inversely proportional

Source: Huggett, 1995, p. 16.

statutory commission was then established for the management of the Crown's estates (including the coastal fringe) under the 1829 Crown Lands Act.

Submarine mining for coal and tin produced conflict between landowners and the Crown over tax revenues. This prompted the Lord Chancellor, in 1854, to define the foreshore's boundaries as the high and low water marks of an average tide, which recognised the separate status of ownership of intertidal property and the foreshore, which is vested *prima facie* in the Crown (Lee, 1993). The Lord Chancellor's judgement was a 'compromise solution' to property disputes, disregarding the natural environment and applied only to the foreshore of England and Wales. In Scotland ancient custom has established their extent as limited by mean spring tides, but no legal definition of foreshore boundaries exists (Aurrocoechea and Pethick, 1986). Unfortunately, the definition excluded areas immediately adjacent to 'the foreshore', periodically exposed by the tide, and did not take account of the physical processes of erosion and accretion that alter the foreshore's boundaries. It gave the coastline the exceptional legal status of a moveable freehold.

4.3.1.1 The Crown Estate Commissioners.

The Crown Estate, established by the 1961 Crown Estates Act, controls the whole of the UK's territorial sea bed and approximately 55 per cent of the foreshore. Almost all subtidal areas within the limits of the territorial sea have also been vested in the Crown Estate by the 1964 Continental Shelf Act. The Board of Commissioners, appointed by the Sovereign, is required to maintain and enhance the value of the Estate and the return obtained from it, but with due regard to the requirements of good management. The Commissioners are therefore effectively absentee landlords of the maritime coastal zone, owning a resource that they cannot use themselves but for which their consent is needed for offshore development. Their duty is also fundamentally a financial one, because the net surplus of the Estate's return is passed to the Treasury, forming part of the government's income (Murray, 1991). Consequently, despite its marine environmental remit, the CEC is under the direction of the Chancellor of the Exchequer (Warren, 1991).

The CEC manages the sea bed as an asset and most activities require their approval and consent. It has considerable interest in licensing marine aggregate extraction and fish farming, while the government is responsible for regulating most activities below the LWM (i.e., harbour works, oil and gas licences and works authorised by Private and Local Acts). The CEC derives its powers from contracts with leaseholders or licences, operating within private rather than statutory law. Such rights can only be removed or restricted by specific legislation, through international agreements and local bylaws.

The seabed provides approximately 16 per cent of the UK requirement of sand and gravel for the construction industry and is important in maintaining supplies and reducing pressure from land sources. It is government policy to encourage the use of marine aggregates wherever possible, without damaging sea fisheries, the marine environment, or introducing the risk of coastal erosion. Consequently, sea bed material is increasingly in demand for major construction projects and beach replenishment schemes, and export to Europe.

With no statutory planning system, the dredging industry has been subject to control by the Department of Transport under the 1949 Coast Protection Act. Since 1989 the procedure for determining production applications has been regulated through a consultation exercise known as the Government View Procedure (GVP). This non-statutory procedure is essentially an extensive consultation exercise amongst relevant government departments, local authorities, coastal defence interests, conservation groups and local operators. Any conditions required as a result of consultation are incorporated into the licence and are enforceable by the CEC. Without a positive Government View the Crown Estate Commissioners will not issue a production licence. The CEC therefore asserts that in respect of marine aggregate extraction it acts as landowner and not quasi-planning authority (Murray, 1991). In giving consent the Commissioners effectively determine whether proposals are implemented and they thereby exercise a form of planning control. It is difficult, however, to regard the Commissioners as logical custodians of the foreshore and seabed, and their quasi-planning status is currently under review.

The CEC and the GVP are not a universally accepted mechanism for regulating marine aggregate extraction or such environmental issues in marine management. For example, the British Marine Aggregate Producers Association, which represents the industry, is unhappy with the time consultations take (often up to 18 months) and the lack of an appeal procedure should an application be rejected. Furthermore, there is no guidance on the nature and level of information required by the industry to support applications (DoE, 1993b). Conservationists are also concerned that the broader ecological effects are not adequately considered because there are no provisions for public enquiries where environmental issues might be raised, no local accountability, and the EC Directive on environmental assessment is not statutorily applied (NCEAG, 1993).

The marine fish farming industry has expanded rapidly over the past 25 years, and now makes an important contribution to Scotland's rural economy. Whilst it is socially and economically desirable, the industry's pollution and visual impact do conflict with nature conservation interests (Warren, 1991). With farms positioned in coastal waters (cages held in position above the sea bed by moorings) there is no legislation to plan fish farming in terms of CZM. Sea bed leases were issued by the CEC until 1986 without reference to other interested parties.

The government and the CEC have since developed a framework for reviewing lease applications that enables the development of the industry to take place in a more sustainable way, whilst safeguarding the coastal environment (Scottish Office, 1993). Under the Scottish Office's procedures, applications are decided following consultation with the general public and approximately 30 public authorities, agencies and private interest groups. In considering applications the CEC attempts to balance fish farming interests with navigation, pollution control and nature conservation (DoE, 1993b). Criticism is still made of this modified system because consultation does not necessarily mean action, and the CEC is not obliged to give effect to any representation made. The CEC is not even obliged to inform consultees of the reasons for overruling their advice. Nevertheless, over 50 per cent of applications are rejected, and those accepted are often modified before being granted because of objections from conservation bodies (Murray, 1991).

The current system of marine fish farming gives a quasi-planning role to the CEC, while acting on government advice (Warren, 1991). As with marine aggregate extraction the CEC is criticised because it is not a disinterested party, standing to benefit financially from a lease. Unlike local authorities the Commissioners are not elected but nominated, and the Crown Estate is therefore criticised for being unaccountable and undemocratic. The Crown Estate is also charged with managing and enhancing the Estate for financial purposes, so any environmental activity must always be secondary to economic considerations. While the CEC argues that it regards the environment and its conservation as a major priority in the management of the Estate, others insist that they are not the appropriate body to carry out environmental functions because their vested interests affect their whole approach (Murray, 1991).

With no statutory frameworks, regulatory procedures have been established to control the dredging of marine aggregates and fish farms' licences. Many criticisms of the planning system on the sea bed have not been concerned with whether the system works, but whether a non-statutory decision making process would be suitable to regulate offshore activities when a statutory planning system exists above the LWM. The development of a coast-wide CZM system would incorporate such planning issues, relieving the CEC of their environmental management duty and allowing them to focus on developing the values of their estates.

4.3.2 Regulation of Development On and In the Sea.

The freedom of navigation is a long established right confirmed in international law by the 1982 United Nations Convention on the Law of the Sea.[6] In the UK, the Department of Transport works through the International Maritime Organisation to minimise the risks for shipping in territorial waters. Sea lanes and pilotage in the English Channel and southern North Sea have been established to improve the safety of navigation

[6] The freedom of navigation on the high seas is preserved in Law of the Sea Convention article 78(2), which states that: *the exercise of the rights of the coastal State over the continental shelf must not infringe or result in any unjustifiable interference with navigation and other rights and freedoms of other States as provided for in this Convention.*

although no ship is obliged to follow a specific route. While the Ministry regulates commercial shipping, smaller recreational crafts are not regulated in the same way. All leisure sailors are bound by the same international agreements as commercial craft.

Leisure craft are also regulated through bylaws to control movement in harbours, for the safety of bathers, and to control pollution in coastal waters. Recently there has been a dramatic increase in the popularity of water-sports and problems have arisen because most activities require an almost exclusive use of water space. In many places, especially the southern and south-east coast, competition for water space has become critical and the demand for recreational boating has led to a proliferation of harbours, moorings and marinas often without any semblance of strategic planning onshore or offshore (Carter, 1989).

Health and safety constraints abound in the recreational use of coastal waters. Poor water quality can be a health risk and all water-based activities are inherently dangerous, carrying a relatively high risk of drowning (Carter, 1989). The bylaw-making provisions of the 1961 Public Health Act and the 1976 Local Government (Miscellaneous Provisions) Act are important mechanisms by which to extend local authority control over offshore areas to control leisure craft up to one kilometre offshore. These bylaws require the effective use of silencers to limit disturbance and regulate the speed of all leisure craft so as to prevent danger to other sea users (DoE, 1993b). Leisure boating could potentially be effectively regulated if a local authority's bylaws were used in conjunction with other powers such as the provision of landward access to moorings through the planning system. The powers provided by the Acts are widely considered to be inadequate due to the difficulties in defining separate zones for different craft and the difficulty and cost of enforcement. A local authority's powers offshore are therefore severely restricted.

The regulation of fisheries in UK waters is achieved through the EU Commission 1983 Common Fisheries Policy (CFP). Under the CFP only UK vessels can fish up to six nautical miles offshore and only specific countries can fish for specific species in defined areas of the UK's territorial sea. In the remaining UK EFZ (200 nautical miles

offshore) EU countries have equal access, whereas non-EU countries can only fish by agreement.

The UK fishing industry is controlled through a variety of legislation that covers fish stock conservation and regulation of fishing vessels (DoE, 1993b). Under the 1966 Sea Fisheries Regulation Act, twelve Sea Fisheries Committees (SFCs) cover the English and Welsh coastline and act as independent authorities responsible for regulating the inshore (i.e. within six nautical miles of the coast) fisheries. Seven of the twelve are joint committees of County and/or Metropolitan Borough councils and all are composed of a member of the EA, local authority representatives, and persons acquainted with the needs and opinions of fishing interests in the district (Bradley, 1994). To regulate inshore fisheries, each SFC possesses bylaw making powers. SFCs can make bylaws to restrict or prohibit the taking of all or any specified fish in particular areas or at specified times, restrict or prohibit a particular method of fishing; and regulate, protect and develop fisheries for shellfish (DoE, 1993b). The bylaws must not disrupt bylaws made by the EA, rights under Private Acts or Royal Charter, or local authorities' powers to discharge sewage. Under the 1992 Sea Fisheries (Wildlife Conservation) Act, SFCs are also required to achieve a reasonable balance between environmental considerations and other factors, taken into account for the purposes of sea fisheries' measures. Although the Act does not provide powers solely to control inshore fisheries for environmental (conservation) reasons, it again provides an opportunity for local authorities to extend their powers across the coastal zone for conservation aims.

Just as on the sea bed, there is no comprehensive mechanism to regulate all activities within the UK's territorial water, which is subject to the traditional rights of navigation, fishing and bathing, in addition to modern pressures including waste disposal, recreation and conservation (Smith and Lalwani, 1992). While a sectoral system exists below low water and beyond local authorities' planning jurisdiction, they are involved in navigation and fisheries management, albeit in a limited way. While a local authority's contribution might be limited, it provides the opportunity to become directly involved in offshore management issues and to network with organisations who might contribute to a non-statutory CZM plan. Pro-active involvement of local authorities in sea use regulation could therefore be potentially significant.

4.3.3 Conclusion.

The coastal environment is affected by a range of planning actions taken by numerous agencies though not with the coast in mind. Owing to the historic legacy of the Crown Estate and the restriction of local planning authorities to above low-water, the concept of a 'coastal zone' (i.e. an area incorporating landward and seaward parts) has never found particular acceptance or application within central government. Insofar as local coastal planning and management initiatives exist in the UK they are closely tied to the general planning system (Jackson and O'Donnell, 1993). Hence there are limits to what can currently be achieved in the coastal zone under the planning system.

A characteristic of UK planning is the disproportionately influential role private organisations play in the management of the coastline (Mitchell, 1982). Voluntary management is usually aimed at protection rather than managing competing uses. The National Trust, for example, owns over 540 miles of high quality coastline that approximates to over 40 per cent of all the valued amenity coast (DoE, 1993b). Private ownership also fails to protect against the negative effects of activities occurring in adjacent areas. Much of the remaining coastline is controlled by local planning authorities that have provided inconsistent or inadequate coastal policies for conservation interests and development and economic growth (see Chapter 6).

4.4 Developing CZM Within the Coastal Planning Framework.

4.4.1 Introduction.

The lack of a centralised national coastal programme has been responsible for a lack of clear policy goals, a dearth of alternative management proposals for competing resources, and an inflexibility of land planning and designation policies (Mitchell, 1982). In addition, while a great deal of attention has focused on the preservation of

scenic, pristine areas, the more developed coastline has received little protection from continued development. As a result, there has been a difference between what might be achieved within the present coastal planning framework and what is achieved by many local authorities (DoE, 1993b).

Since the late 1970s the scale of investment and operation within the coastal zone has been "without previous parallel" (Patmore and Glyptis, 1979). As pressures on the coastal resource have grown, so there has been increased interest in CZM in the UK and elsewhere. Awareness of coastal problems is not new, but there is now recognition that coastal issues must be looked at 'in the round' (Holgate-Pollard, 1996). Consequently, concern has arisen for the need to define the objectives and complexity of planning and management processes through which to relate these and other coastal and estuarial activities and interests to each other.

4.4.2 The Select Committee of the Environment, Session 1991-92.

In the early 1990s, concerns over coastal issues were given fresh impetus by voluntary organisations within the UK expressing concerns over the loss of coastal and estuarine resources.[7] Internationally the impending threats of global warming and associated sea level rise brought the issues of coast protection and coastal planning into closer relationship (IPCC, 1990). Gubbay (1989a) argued that the imbalance between land and sea planning in the UK and the lack of any cohesive policy for the whole of the coastal zone are important issues which need to be addressed by planners in the 1990s. The Association of County Planning Officers also requested guidance on coastal planning, developed from a strategic viewpoint, following a Royal Town Planning Institute Conference in October 1990 (Gubbay, 1991b).

Concurrently, the DoE and Welsh Office commissioned research into coastal planning resulting in PPG20 *Coastal Planning* (DoE, 1992b), which sought to establish a planning framework to conserve and manage the coast in a comprehensive and

[7] Of particular influence were the RSPB (Rothwell and Housden, 1990), the Marine Conservation Society in partnership with the World Wide Fund for Nature (Gubbay, 1989a; 1990).

co-ordinated way, through voluntary initiatives by local planning authorities. At first, the role of development plans in the planning of the coastal zone was comprehensively addressed as a strategic issue. PPG20 encouraged local authority co-operation in the preparation of planning policies and development plans, which involved all other relevant agencies with an interest in the coast. Local planning authorities were also advised to consider the interrelationship of policies to achieve an integrated approach, especially across administrative boundaries.

Through PPG20, the DoE claimed that no other country had gone so far as to produce such a general statement of coastal policy (Zetter, 1992). The government committed itself to a greater degree of public participation in seaward development decisions, and an increasing role for development plans in the coastal zone (Stoker, 1993). Nevertheless, despite accepting that the coastal zone should be planned and managed in an integrated way, the government still supported the sectoral division of planning responsibilities.

In Parliament, the issue of CZM was taken up in 1991 by the House of Commons Environment Select Committee, in response to sustained concern and concerted lobbying. The aim of the Committee's enquiry was to investigate existing policies and responsibilities for planning and protecting the coastal zone, and to make recommendations to government. While the Committee's inquiry was curtailed by the 1992 General Election, it had already sufficient evidence from its extensive inquiry into coastal zone protection and planning to report. The Committee had considered detailed written evidence from over eighty organisations (and fifteen submissions or oral evidence) including central government, local authorities, industry, and statutory and voluntary conservation organisations. This reflected both the importance and the diversity of the coastal zone, and the concerns over its deterioration.

The final report covered a variety of individual topics including the nature of the coastal zone and the pressures affecting it, the national planning framework, coast protection and sea defence. Central to the Committee's findings was the need for a comprehensive and integrated approach to coastal issues. To achieve this, the Committee saw scope for improved links between respective authorities and agencies, and was critical of what it

saw of overlapping policies and practices (Holgate-Pollard, 1996). The report was noted for the remarkable attention to detail given to each topic in the time available. It is thus a touchstone for those involved in coastal zone planning and management (Rothwell, 1993).

The Committee was very critical of the coastal planning system that had evolved from the 1947 Town and Country Planning Act considering it to have suffered from centuries of uncoordinated decisions and actions, at both national and local levels. The Committee also found "inadequacies in legislation, anomalies in the planning system, a lack of coastal guidance, and overlapping and conflicting policies and responsibilities (and in some cases a lack of action) among a host of bodies, with poor co-ordination between them" (HoC Environment Committee, 1992, para. 3). From their investigations, the Committee recommended that the government seriously consider ways of harmonising planning across the LWM, through a blanket extension of local authorities' planning powers, to the limit of the territorial sea. Likewise, that a hierarchy of non-statutory national, regional and local CZM plans should be incorporated into relevant development plans. The establishing of a national strategy and setting of long-term objectives and guidelines for implementing coastal policy were also recommended.

The system was identified as failing to protect the nation's coastal resources in an integrated or co-ordinated manner. The present system was also unable to provide a more comprehensive and integrated approach, which required the legislation to be consolidated and updated, new coastal policy developed, planning systems reviewed and coastal zone plans created. Examining the issue of the 'coastal zone', the Committee had concluded that, "The coastline should not be seen as a physical or administrative boundary, but that the coastal zone should be treated as one integrated unit, embracing inshore waters, intertidal areas and maritime land" (HoC Environment Committee, 1992, para. 17). Consequently, it was concluded that, "Coastal zone protection and planning demand an overall system and not the ad hoc and sectoral approaches that have been adopted in the past" (HoC Environment Committee, 1992, para. 5).

Through its recommendations for a more comprehensive and integrated approach towards coastal planning, a consolidation of the existing legislation, and a review of the planning system, the Committee went as far as it could to give an accurate report of coastal issues. Following such a critical review of the coastal framework, government was expected to respond and give advice on integrating coastal zone planning and management issues (Housden, 1993).

4.4.3 The Government Response.

Responding to the Select Committee, the government welcomed the report declaring a firm commitment to the effective protection and planning of our coast" (DoE, 1992a). The government acknowledged the need for the strategic management of coastal issues that cross local authority boundaries, straddle the land-sea divide, and integrate the management of the resources of the inshore waters and seabed. By accepting these principles the government essentially agreed to the need for a clear framework of national policy to take account of interactions within the coastal zone. The government argued that coastal management must be based on a multi-agency approach in which local authorities and other bodies resolve conflicts on a voluntary basis (DoE, 1992a). The response also emphasised the new Inter-Departmental Group on coastal policy (IDG). The IDG acts as a general liaison point on all coastal issues and provides the Secretariat within the DoE. All UK government departments with interests in the coast are represented in the group, which helps to link relative policy developments by the respective departments (Holgate-Pollard, 1996).

While promising to further debate the management of the coastal zone in two discussion papers investigating planning above and below the LWM, the government rejected other major recommendations. These included a defined national strategy, because it regarded PPGs as a clear statement of policy. A National Coastal Zone Unit was also rejected in favour of the IDG. Transferring coastal protection and planning responsibilities from MAFF to the DoE was flatly rejected. Finally, a consolidation of coastal zone legislation was refused because the government considered it impractical due to legislation being found in so many Acts. In this final argument the government

was certainly correct. The HoC Environment Committee (1992, para. 19) reported "there are 80 Acts dealing with the regulation of activities taking place in the coastal zone". They concluded that current legislation was "too diffuse to provide an integrated or efficient framework for coastal protection and planning." The government, however, considered that, "the coast cannot be isolated and treated as entirely separate from the broader land mass or separate from the management of territorial and intertidal waters" (DoE, 1992a, para. 27). Eighty Acts of Parliament were derived from a Nature Conservancy Council review that listed 89 statutes affecting the coast of England, Scotland and Wales. Unfortunately this review only considered Acts with a direct bearing on the natural environment (especially the sea) and excluded much legislation applicable to terrestrial and intertidal areas. Consequently, the Committee seriously underestimated the scale of coastal zone legislation as a whole. Gibson (1993, p. 125) considered the Committee's recommendation for consolidation of legislation "too simplistic" and the government itself asserted that, "The need for updating [coastal zone legislation] is continually kept under review" (DoE, 1992a, para. 26).

The Committee also estimated that as many as 240 Government Departments, local authorities and public agencies at national and local level had some responsibility for the UK coast. This did not include hundreds of parish councils. This is hardly an 'efficient framework'. The government argued that no widespread duplication of responsibilities or poor co-ordination existed between those organisations involved in coastal matters (DoE, 1992a, para. 29). Nevertheless, if all organisations are to co-operate effectively it is essential that their legislation should permit them to act according to the best public interest, and for the best interest of the environment. Statutory bodies are often constrained by an administrative law principle of *ultra vires*, and as such are prevented from doing anything not expressly or implicitly authorised by the enactments under which they operate (Gibson, 1993). This doctrine is designed to prevent the abuse of power, presupposing that Parliament has provided local authorities with adequate legislation. In reality the law regularly fails to keep pace with new situations. Consequently, laws that are confined to either land or sea are often inadequate due to their inability to account for actions in the coastal zone as a whole. The limitations of *ultra vires* have been overcome by including statutory duties to take account of environmental conservation in enactments governing public bodies whose primary

responsibilities are in other fields. While such selective reforms are useful, they only represent a piecemeal solution to a general problem (Gibson, 1993).

While the government dismissed the Committee's recommendations, it offered few solutions, preferring instead to issue discussion documents. The current system remains a highly complex milieu. Frameworks have evolved over different time-scales and for a variety of reasons. Planning is sectoral (i.e. powers generally relate to a requirement for an organisation to perform a specific duty) and current responsibilities reflect past economic climates, historic ownership patterns, a need to protect life or investment, responses to EU legislation, and to regulate expanding industry. The complexity of arrangements is exacerbated by the different legislation provisions, policy contexts, the *ultra vires* principle and numerous responsible authorities. A system of integrated management remains unlikely if based solely on *ad hoc* non-statutory local authority led initiatives.

4.4.3.1 The Consultation Papers.

The coastal debate was taken a stage further in Autumn 1993 when the government published two linked discussion papers in response to sustained pressure on how it would deal with a wide range of coastal issues (Earll, 1994). The consultation papers fulfilled the commitments made in the response to the Environment Select Committee's Report in 1992. The first, *Development Below Low Water Mark*, assessed the existing sectoral systems for regulating development in inshore waters (DoE/WO, 1993a). The second, *Managing the Coast*, examined the role of coastal management plans and the powers supporting them (DoE/WO, 1993b).

"Development Below Low Water Mark" compared the current sectoral approach with those approaches perceived as arising from an extension of planning powers out to sea based on a set of key principles that involved scale and cost effectiveness, environmental protection, and the land-sea boundary. The paper rightly identified that "Regulation of off-shore and inter-tidal development is already extensive, based largely on a sector by sector approach which has evolved as a response to the complexity of the

marine environment and the needs and environmental implications and development in each sector" (DoE/WO, 1993a, para. 3). Interpreting this as a major strength of the current system, discussion also highlighted other perceived advantages including cost-effectiveness, the avoidance of comprehensive advance planning, and the ability to organise project management for projects of national economic or environmental interest.

The advantages to be gained from extending planning jurisdiction beyond low water were considered, but the government argued that the development process would be perceived as secretive and not publicly accountable, complex and failing to provide comprehensive coverage for all development types. It was acknowledged that the planning system's strengths included balancing environmental, economic, and other factors, through the statutory requirement to take all material considerations into account. Likewise, that a sectoral approach was potentially weak when considering developments without careful environmental appraisal of their cumulative impacts. In addition, the government argued that extension would be costly to initiate, risk inconsistent decision-making, impose difficulties on authorities in meeting international obligations, and fragment development control between numerous local authorities. The planning system also has a limited potential for fisheries' management, hydrocarbon licensing, and aggregate extraction proposals. Each would result in a loss of economies of scale necessary for economic development and the would necessitate the continual intervention of government for development proposals requiring a central decision rather than allow parochial decision-taking.

The paper concluded that the advantages of extending the planning system below low water were "more apparent than real, when compared with sectoral development controls which achieve similar objectives" (DoE/WO, 1993a, para. 7.4). In the government's opinion much the same could be achieved through the sectoral approach, and such strengths as the planning system would be outweighed by its weaknesses were it extended. The government considered that extension might only be justified where development took place close inshore and had a significant impact on the immediate shoreline, or resembled types of development already controlled on land. Consequently,

the government rejected the suggestion to develop the present system based on extension of land-use planning.

By implying that co-ordination of offshore activities was too complex for an integrated planning approach the government's position was negative. The support for a 'development-led' approach below low water contradicts the 'plan-led' approach advocated in the terrestrial environment, and thus simply defended the present sectoral system. The paper's appraisal and subsequent analysis of existing control systems were heavily criticised because it treated the planning system essentially as a development control tool, neglecting the system's provision for forward planning. Thus the principles for evaluating the existing systems were not integrated in an overall framework for forward planning across the coastal zone (NCEAG, 1993). The RSPB also argued that it simply provided a descriptive overview of current arrangements, lacking rigorous analysis of the strengths and weaknesses of each system (Southgate, 1994, para. 38). The discussion document failed to address why the sectoral regulation of off-shore and inter-tidal development was the product of a vacuum lacking any co-ordination or integration, or scrutinise the lack of a single co-ordinated control mechanism and a comprehensive coastal strategy. Although the need to consider cumulative impacts was admitted, no effective proposals were proposed to achieve co-ordination between decision-makers of regulatory bodies.

"Managing the Coast" (DoE/WO, 1993b) examined whether changes might be necessary to facilitate more effective management of activity within the coastal zone, while a sectoral approach continued in parallel below low water. The paper reviewed the need for coastal management plans, their relationship with existing initiatives and structures, management structures and issues of good practice, and assessed options for change. The paper acknowledged that in areas of substantial conflict management plans provided a means of integrating different interests, prioritising issues and ensuring the effective deployment of local resources. Government argued that coastal management plans should be built on, complement and inform existing strategic initiatives, but not replace the statutory powers and rights of existing bodies. Coastal management plans also often cover several local authority jurisdictions. The range of local authority expertise and their contact with local communities to whom they are politically

accountable, makes them the natural nucleus for coastal management. Close links between coastal plans and statutory development plans were considered a particular advantage of local authorities, as was their responsibility for a wide range of planning and management functions, including coastal defence responsibilities and role in SFCs. The local authority's leading role was therefore considered vital by government to ensure an effective strategic approach to managing the coast.

The paper also assessed existing bylaw and order-making powers, considering options for a more general reform of powers to address a broader range of environmental and recreational issues on the coast. The government recognised limitations in the existing powers to manage modern activities on the coast effectively, particularly the inability of local authorities and SFCs to make bylaws for conservation purposes (DoE/WO, 1993b). The lack of adequate powers would seriously hamper the effective implementation of many coastal and estuarine management plans in preparation. Consequently, the government proposed to review and update these powers to provide more statutory backing for management of the coastal environment. "Managing the Coast" concluded that effective management of the coastal zone requires the integration of economic and environmental considerations between all government agencies and an integration of coastal policy with those broader policies applying to landward and seaward portions of the coast (DoE/WO, 1993b). The apparent rejection of a sectoral approach in CZM contradicted the government's insistence that a sectoral approach was effective and should continue below low water.

The NCEAG (1994) questioned whether the difficulties in achieving voluntary co-operation and compromise in all sectors had been seriously underestimated due to the variety of authorities with legitimate coastal interests, increasing resource difficulties and complexities achieving consensus might be difficult to achieve voluntarily. The reliance on voluntary co-operation suggests minimal government involvement, particularly with the discussion paper insisting that proposals should not impose significant additional burdens on central or local government. The RSPB, criticising this approach, defended the Select Committee's original recommendation for an integrated national strategy setting clear and measurable targets, and objectives for decision-making in all sectors and at all levels to follow (Southgate, 1994). The

discussion paper failed adequately to consider a national coastal strategy and the need for central government arbitration where fundamental differences could not otherwise be resolved. It was also reproved for failing to identify how management plans should be developed on a wider scale, and which plans or strategies should take precedence where inconsistencies arose (Payne, 1994).

The two discussion papers prompted a high degree of interest, but failed to satisfy the Select Committee, local authority associations or interested NGOs. The Select Committee Chair, Robert Jones MP, expressed concern at misrepresentation of the Committee's views, considering the government's response to be 'tangential' and failing to address the issues in a straightforward way (NCEAG, 1994). "Managing the Coast", in Jones' opinion, reflected very little broadening of the DoE's limited sectoral approach, while "Development Below Low Water" did not address the Committee's recommendation that the government should examine options for a national coastal zone unit. The three local authority associations and the RPTI were also critical of the lack of specific guidance on process, objectives and approach. With the involvement of agencies on a voluntary basis, for example, no advice was given over what should happen should the co-operation not be forthcoming. Moreover, the absence of strategic objectives and arrangements to deal with conflicts not readily overcome in management plan preparation and implementation were criticised.

The papers claimed to be parallel, but their conclusions were largely inconsistent and unrelated. The sectoral regime endorsed by "Development Below Low Water" was contradicted by "Managing the Coast", which rejected it in favour of an integrated view of the coastal zone. Nevertheless, the government considered the consultation useful for crystallising the argument into three main themes. Firstly, the need for improved co-ordination of administrative arrangements, while giving full recognition to the different uses of the coastal zone. Secondly, widespread acknowledgement of the unique ecology and amenity value of the coast, and the need to ensure that environmental issues would be fully integrated into the decision-making process. Thirdly, the consultation identified that any measures of regulation must strike a fair balance with the range of uses that the coastal zone must serve (Holgate-Pollard, 1996). The RSPB questioned whether the two discussion papers actually constituted the

strategy for coastal management and planning as the government claimed. It asserted that each paper only forwarded options for improving the system without considering how these changes will be achieved (Payne, 1994). Earll (1994, p. 5) additionally noted "these papers are described as 'consultation documents' but it seems likely that they will stand as UK government policy for some years to come."

4.4.3.2 Additional Government CZM Measures.

Comments received from the DoE's consultation papers prompted further actions including a coastal forum, and a statement of national coastal policy guidelines for the English Coast. These measures signalled government recognition of the heightened importance attached to effective coastal management by local authorities and NGOs, and declared their aims as a balance between environmental, commercial, leisure and other demands placed on the coastal zone (Holgate-Pollard, 1996). While developing these refinements to government CZM policy the DoE maintained that existing statutory systems would not be modified because the government considered the sectoral approach to be the right one.

The Coastal Forum, launched in December 1994, incorporates all the major interests from commerce, industry, environmental and leisure organisations, concerned with coastal management as well as central and local government representatives and relevant professional groups. By focusing on the development of coastal management in England, the forum provides a vehicle for general discussion of national issues and specific topic groups, which discuss specific issues in more detail. For example, the first such group established considers the management of coastal habitats, and recently the RSPB initiated a group to consider port development and conservation (DoE, July 1996). The Coastal Forum's terms of reference seek in particular to promote understanding of coastal zone initiatives and build on existing liaison arrangements at regional and local levels. The Forum will also assist in the evaluation of action to implement coastal zone initiatives, monitor the preparation of a guide for good practice, and complement (but not overlap) the work of others with interests in coastal issues.

The second action was the "Policy Guidelines for the Coast" (DoE, 1995) that aims to summarise current procedures, related administrative operations, official and other reference materials. The new guidance did not modify or replace existing detailed guidance, which had precedence in the event of a dispute, but highlights key aims on a wide range of coastal zone topics, and provides advice and procedures in a concise form (DoE, 1995). The DoE consider the guidelines reflect the importance attached to effective coastal management and are an important landmark in promoting successful management of this vital resource (DoE Press Release, November 1995). The document did not advance the CZM debate but restated the government's aim "to reconcile the requirements of development and economic activity with the need to protect, conserve and improve the coastal environment." The guidelines identified the promotion of integrated management of the coast as a theme and priority, but nowhere did it specifically consider integrating the procedures across the coastal zone. Nevertheless, following its publication public and private bodies, agencies and other organisations were requested to have close regard to the Guidelines in pursuing effective management of the coastal resource.

The major initiative to come from the discussion papers was the publishing of a 'best practice guide', which aimed to enhance effective co-ordination of policies and actions relating to England's coast. The guide, "Coastal Zone Management – Towards Best Practice" is complementary to the "Policy Guidelines For The Coast". It aims to highlight best practice for bodies preparing coastal management plans by bringing together all those engaged in managing the coast through an integrated process that nevertheless retains and respects their roles and responsibilities (DoE. 1996). Rather than being a technical document the guide focuses on the basic principles and objectives relating to plans, emphasising what has already been achieved, what is currently done well, and what potential there is for doing better. As part of its task, the Guide aimed to define the role of the key players, give examples of best practice in helping to resolve competing pressures on the coast, and help clarify how different elements of management interact, thereby setting out a framework within which a wide range of approaches are appropriate (Holgate-Pollard, 1996).

The guide examined the main issues arising in coastal management and identified current examples of successful aspects of coastal management planning. These included the establishing of a project, maintaining consensus and communication in groups, achieving integration and action at the coast. The principle of CZM was defined as the process bringing together all those involved in the development, management and use of the coast within a framework facilitating the integration of interests to achieve common objectives. It was also noted, however, that there is no single framework for CZM in the UK (DoE, 1996). The guide argues that sectoral responsibility for managing the coast should be maintained, reflecting the government's persistent assertion that in spite of the increased understanding of CZM and the planning of more integrated and local approaches, a sectoral framework is still the most effective approach. Nevertheless, the best practice for achieving integration was identified as clarifying an agreed means of consultation that focused on existing structures to establish communication and relationships, seeking to manage, but not control, uncertainty, and setting out objectives and targets, explaining them to those preparing other plans. Through such advice the government is seeking to encourage multi-agency, voluntary approaches towards CZM, while also supporting the sectoral approach to regulation of the coast. In addition it is stressing the continuing voluntary nature of coastal management plans and the need for local consensus.

Although the guide is promoted as evidence of the government's commitment to protecting and preserving the coastline, delivered locally through voluntary partnerships from within the existing sectoral framework, the criteria defining 'best practice' were not defined. Many of the plans reviewed are in final draft or recently launched, without an advanced implementation programme and even the guide itself concedes it is not possible to give many examples of successful practice in implementing integrated management (DoE, 1996). The 'Guide To Best Practice' is thus simply a review of current practice and which strategies might succeed in completing a coastal plan. This reflects the government's reluctance to become involved, financially or otherwise, in actual coastal zone issues.

Potential funding for CZM initiatives is identified as a crucial issue in the guide, but is poorly addressed. Most CZM initiatives depend on funding provided from organising

bodies' existing budgets, and assistance with staff time from bodies including English Nature and industry, but as the guide states, "There is no specific, direct funding from the Department of the Environment currently available for coastal projects" (DoE, 1996, p. 48). Little advice is offered beyond accepting that "the challenge to the entrepreneurial skills of project leaders will be immense" (DoE, 1996, p. 48). Consequently, with limited governmental assistance and local authorities facing increasing expenditure cutbacks, reliance on the private and voluntary sectors to fund initiatives will increase and implementation will make fresh demands on existing budgets. Current initiatives have been underwritten or sponsored in their early phases by public authorities or industry, but continuity remains problematic and advice is simply to ensure that those preparing plans establish funding for the whole project as early as possible (DoE, 1996). As a guide to best practice, therefore, the guidance does not extend to sources of secure funding.

Additional criticisms included the guide's failure to consider long-term goals and policies to resolve conflict (Huggett, *pers. comm.*). While sustainable development and the conservation of biodiversity require an awareness of long-term impacts on the environment, the DoE has failed to define what long-term goals at the coast should be. The voluntary nature of the system, identified as a strength, is also a weakness when managing more complex issues, some of which are subject to statutory obligations that must override other matters. The Guide asserts that some sectoral interests "may have to subsume or reduce their individual priorities if wider objectives are to be allowed" (DoE, 1996, p. 33). No priorities are identified, however. Consequently, any major projects at the coast will remain beyond the influence of a voluntary plan, particularly those that straddle the land/sea interface or are located below low water. The success of the 'Guide to Best Practice' is thus of limited value, in that it fails to advance the development of CZM and simply promotes multi-agency co-operation led by local authorities within the divided jurisdictional of the UK coastal zone.

4.5 Conclusion.

CZM depends on effective integration of the many facets of activity, communication and planning, but many of the complexities and anomalous features in the present administration of the UK's coastal zone are the result of historic legacy and present political opinion. Crucial to the nature of UK CZM, for example, is the termination of local authority jurisdiction at low water that marks the separation of the integrated land-use planning system from the *ad hoc* licensing system operating offshore. In spite of the DoE (1996) wanting CZM to integrate policies between land and sea and provide a route for resolving matters that straddle and interact the land/sea interface, neither planning mechanism can successfully accommodate such ambition. The rejection of ideas such as extending the land-use planning system below low water, creating a coastal zone department or developing a national CZM strategy, indicates that the government has no particular ambition for CZM, particularly if it should mean creating new legislation or relinquishing the Ministerial administration of marine resources to another Ministry or local authority. Consequently, the DoE has promoted a bottom-up approach, organised as independent planning initiatives that involve local authorities with issues on a local rather than national policy scale.

In any voluntary CZM initiative, the national policy is that existing institutional structures and their statutory responsibilities should be respected, but that the content and scope of coastal management should be dictated locally. The 'best practice guide' supports the notion that management plans should be prepared only where justified by local issues, or by the need to bring together existing agencies' activities, normally (but not inevitably) led by local government. In addition the DoE (1995) requested all parties to involve themselves actively in the planning process to the fullest practical and, where relevant, statutory extent of their respective responsibilities (Table 4.3).

Local politics in the 1990s will increasingly need to be analysed in terms that acknowledge new power relations. These must reflect an increased emphasis on public and private partnership. Which partner is dominant in particular cases may be an open question, but is the question that matters (Cochrane, 1991). Elected local government

Table 4.3 Interactions Between Major Types of Coastal Plans.

	Development Plan	Marine SAC Management	Heritage Coast Plans	LEAPs	Harbour Authorities	SMPs	EMPs
Development Plans		Provides information on environmental sensitivity and management measures within relevant area.	Defines protected landscape areas; provides guidance on recreation.	Illustrates areas liable to flood.	Advice on port management and impact of development proposals	Advice on areas liable to flood, erosion and instability. Areas best suited to development. Advice to mineral plans.	Provides monitoring data; management of land/sea interface; provides general management context.
Marine SAC Management	Provides development context and identifies threats from land.		Provides broad context; management of access and recreation, especially on land.	Information on water quality, fisheries, pollution etc.	Advice of shipping movements, need for dredging and dumping.	Advice on long-term natural processes; impact of defence measures.	Provides wider conservation and management context.
Heritage Coast Plans	Advice on supporting infrastructure – transport etc. Development context and support for strategy.	Provides information on implications of management measures on onshore recreation activities and facilities.		Water quality, water and beach pollution; water-based recreation issues.	Little correspondence.	Relationship of natural processes to landscape strategy; advice on access.	Environmental context; sensitive sites; interaction of onshore and water-based recreation.
Local Environment Agency Plans (LEAPs)	Trends in population, development patterns, transport demands. Potential sources of pollution; links with development control.	Provides information on conservation interests and management measures within the relevant area.	Impact of pollution from visitors, recreation etc.		Impact of major port development; demands for water; possible sources of pollution.	Knowledge of sediment movements will affect strategies at river mouths.	Exchange of common information requirements.
Harbour Authorities	Provides development policy context; provision of infrastructure, especially transport links.	Advice on conservation constraints on development proposals, dredging etc.	Likely to be little coincidence.	Pollution monitoring and information.		Need for marine aggregate wharves; advice on availability of dredged material.	Environmental context for port development and management.
Shoreline Management Plans (SMPs)	Pressures for development. Environmental constraints. Interaction with strategy in areas of managed set back etc.	Advice on environmental constraints; sources of marine aggregates etc.	Landscape assessment; impact of recreation.	Impact of sediment transport by rivers.	Need to protect port facilities; dredging and dumping requirements.		Exchange of common information; environmental issues.
Estuary Management Plans (EMPs)	Development policy context; transport and open space strategies.	Detailed advice on conservation management and provision of environmental data.	Recreational background. Advice on management, signing etc. Landscape assessment.	Pollution information; impact on fisheries etc.	Impact of port development; shipping movements. Contingency/emergency information.	Defence strategy; background on environmental resources and impact of management units.	

Source: Doe, 1996.

can play an active role as mediator between different interests, managing those otherwise excluded. This will occur in an overall context that acknowledges the role of business and the requirements of sustainable development, particularly concerning issues such as CZM.

The impact of local authorities developing CZM plans could be to encourage a fundamental re-thinking of the form and content of the planning system. Rather than reinforcing traditional strategies and policies, new concepts, technical methods and policy processes might be adopted. It could lead to significant institutional changes, for example, to allow inter-sectoral co-ordination and a stronger emphasis on regional strategy (Healey and Shaw, 1994). Non-statutory planning might result in planners acting as mediating professionals, the State as a series of integrated organisations, and the public as part of a plan's evolution, rather than simply its application. This remains highly unlikely, however, because the government is resistant to any modifications of the coast. Indeed, the DoE considers that the recent initiatives (described above) complement policy action for the coast by lead agencies and help to reconcile competing pressures on the coastal zone, obviating the need for more radical revision (see, for example, Holgate-Pollard, 1996).

The six most significant statutory plan types affecting the coast reflect the diversity of organisations and planning involved in the UK's coastal zone (see Table 4.3). Co-operation between these major management systems requires a high degree of political will and already challenges coastal managers. Many other forms of coastal management activity are now being undertaken that involve a more holistic approach, but the government warns that where individual organisations focus on particular sectoral interests, these plans and actions need to be brought together to form consistent parts of a CZM strategy within a defined area.

Any *ad hoc* local voluntary initiative will therefore face enormous difficulties both in achieving its own identity and achieving co-ordination and integration among those sectoral initiatives already attempting to relate to one another. The DoE (1996, p. 9) recognises that the task needs "to acknowledge that the management of the coast is an on-going process to which plans and strategies can contribute, but they will not by

themselves, deliver integrated CZM." Significantly, the NCEAG (1996, p. 1) considers "that the current segmented framework and total reliance on the voluntary co-operation of all agencies, will severely limit what can actually be achieved." What the DoE can actually expect to achieve through its approach to CZM is thus questionable. This will be further examined in the case study of the Wash Estuary Management Plan and in comparison to the Netherlands (see Chapters 5 and 6 respectively).

Chapter Five. CZM In The Netherlands.

5.1 Introduction.

It is said that while the Lord created the world, the Dutch created the Netherlands. Jelgersma (1992) described how the tradition of land reclamation originated in Roman Times and developed through the 12th to 16th Centuries using polders to drain the fields and embankments to protect the land from inundation by the sea. The Dutch attitude to land has often been commented upon. Querido (1968, p. 8), for example, concluded that, "Whatever their local conflicts might have been, the inhabitants had to fight their way against their eternal and common enemy: the water. They had to unite for this purpose, and, in order to conduct the struggle, power had to be shared among equals: power to control, to direct, to allocate, to define duties and rights." Dutch coastal planning is therefore inherently different from that found elsewhere in Europe.

Whereas the protection of the coast from erosion and flooding is important in many coastal countries, in the Netherlands it is a national imperative. Without coastal protection and inshore sea-use management, approximately 40 per cent of the country would be liable to flooding by sea or rivers because twenty-seven per cent of the total land area lies below mean sea level (Koekebakker and Peet, 1987). Approximately 60 per cent of the total population inhabits this area, and in a densely populated and highly developed country as small as the Netherlands, choices have to be made between mutually conflicting sectoral interests (Ministry of Foreign Affairs, 1985).

The main sources of prosperity in the Netherlands are tied to shipping, trade and other seabound activities, and the constant struggle against the sea has shaped the national planning and administrative systems. The main policy objective for the coastline is defence against flooding, and all other objectives within the coastal zone (nature conservation, physical planning, economic development) have a lower priority. Different structures have been developed for surface water, groundwater, sea and fresh water, and a distinction is also made between national waters (the sea, primary rivers and estuaries) and waters that are managed by provincial, municipal and local authorities (Klaver, 1992).

In the Netherlands no special legislation exists regarding the use and management of waterfront and coastal areas, but physical planning acts and national water management policy are used in combination for the purpose. Given the necessity for extensive control and maintenance of the system for coastal and water management, a complex system of coastal defence and physical planning operated by public and semi-public authorities, and focused on the management of the coastline to protect low-lying areas, has been democratically organised since the 12th Century. At the base of this powerful system are *waterschaapen* (water boards), which are legal co-operations of landowners and tenants, each holding a number of votes in proportion to their property. Each *waterschaap* has its own technical staff and legal authority, but they are under the supervision of provincial governments, the *Provinciale Waterstaat* have their own technical staff. Water boards are an autonomous instrument of government and under their own legal authority they may be charged with water control (managing dunes, dikes and quays), water quality and the management of inland waterways. Water boards can levy local taxes for flood defence works and deal with common legal, technical and administrative issues.

These bodies, in turn, have been supervised by the Chief-Directory of *Waterstaat* assisted by the *Rijkswaterstaat* (RWS) since 1798. The RWS is the national office of public works, which is in charge of the execution of major water defence and land reclamation projects, and is also responsible for water management, national waterways, harbours and the national road system. A distinction is therefore made, in the water management system, between the maintenance of the coastline, which is done by the national government, and the maintenance of the dunes as flood defence structures, carried out by water boards. Unlike the situation in the UK, little room is left for private land ownership because most dikes and dune areas are directly under provincial and national authority. A diversity of public and private owners often impede integrated planning and management of all functions along the dune coast, but with private activities at the coast very restricted the Dutch coastal zone remains reasonably unspoiled (Louisse and Meulen, 1991).

The Dutch framework of water management, flood protection and sea-use regulation is powerful and complex, and combines to provide an effective coastal management system. The tradition of water management is such that the Dutch can contemplate rising sea-levels with relative equanimity. Problems are surmountable in engineering terms (through strategic projects and maintaining coastal defences) and the potential costs are within the usual expenditure predictions for maintaining the coastline (Faludi and Valk, 1994). Since the 1930s the nation's coastline has been reduced by approximately 1000 kilometres, through large-scale strategic planning of flood defence at the Zuider Zee and Rhine Estuary. This process has required deliberate management (described below). Conversely, land-use planning is not a political issue and coastal land-use planning has previously received relatively little attention from provincial or local authorities (Mitchell, 1982). Wiggerts and Koekebakker (1982) considered it paradoxical that these traditional elements of coastal planning should form the base on which the more integrated land-use and environmental planning of the coastal zone should develop.

Increasingly there is an awareness of the cost of such long-term coastal management and the harm it does to the surroundings. Care for the environment is not purely a matter for public authorities. Public concern over potentially negative impacts of coastal works has made strategic planners strive for 'neutrality'. Pressure groups continually lobby government and rely on a public that is sympathetic. The environment is an apolitical issue, and the continued overall decline of the natural and ecological resources of the coastal zone has raised great public concern and interest in the conservation of remaining natural resources (Koekebakker and Peet, 1987). A recent tendency in physical planning has, therefore, been to find a new equilibrium between socio-economic and environmental concerns, of which planning the Voordelta is a recent example (see below). Consequently, with a powerful administrative infrastructure already in place and central government directly involved in the administration of the coast, it is possible that an integrated CZM programme will enjoy more success in the Netherlands than elsewhere in Europe.

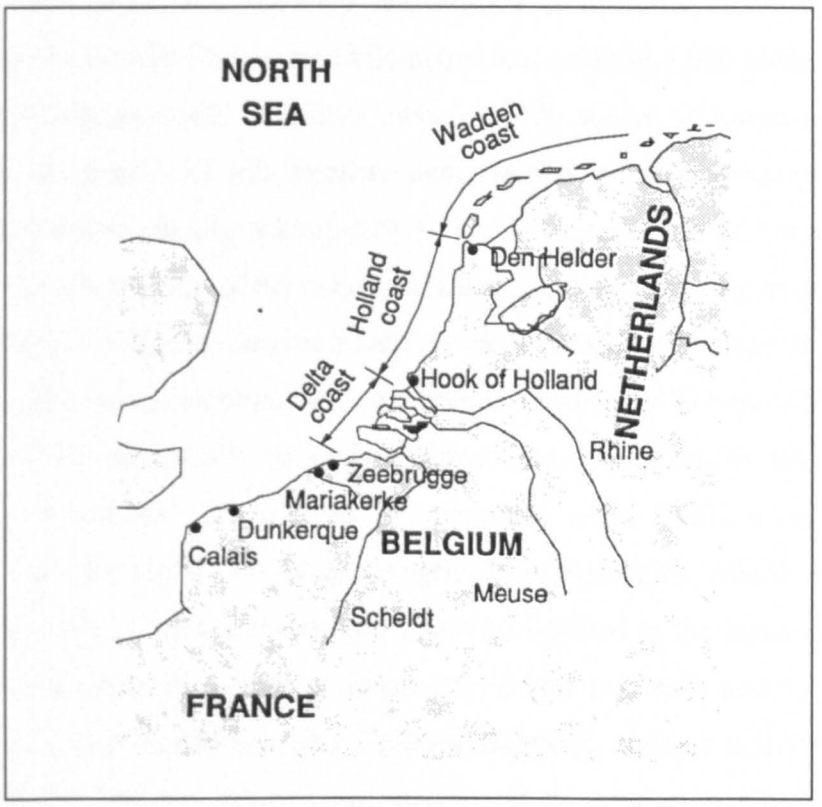
5.2 The Dutch Coastal Zone.

While the national coastal boundaries are only approximately 350 kilometres apart, the Dutch coastline is a convoluted 1,800 kilometres long. The three physical geographic zones of the Delta region, the Central Holland region, and the Waddensea area of barrier islands and tidal flats can be distinguished (Figure 5.1). Koekebakker and Peet (1987) classified the area as a micro- to meso-tidal wind-dominated clastic shoreline with a tidal range of up to 2 metres across the majority the coast. Storm surges, especially from the north-west, may cause extreme high tides of over 4 metres, and can cause devastating floods such as those in 1916 and 1953. The danger of coastal flooding led to the decision to reinforce the country's protection from the North Sea following the 1953 flood, and the coastline, created by the Zuider Zee and the Delta projects, is now 900 kilometres shorter and similar to that of 2000 years ago (ICONA, 1992).

The Delta region, in the south-western part of the Netherlands, is composed of the Rhine, Meuse and Scheldt estuaries, and the majority of the coastline is protected by dikes. It is the most vulnerable part of the Dutch coastline and has for centuries fought a battle against the storm floods of the North Sea, which was only solved by the completion of the Delta Project in 1986. The Delta region's economy is focused on tourism and recreation, fisheries and agriculture, but it also has an important nature conservation function that has influenced the recent coastal planning of the area.

The Central Holland region between the Hook van Holland and Den Helder, is an extensive uninterrupted sandy coastal barrier with high dunes acting as sea defences. The dunes are between 4 and 5 kilometres wide and in some places up to 50 metres high, protecting the central part of the Netherlands that has a population of approximately 5 million people. The chain of dunes is interrupted in some places by harbour entrances, such as the Hook of Holland, and in North Holland a small area is protected by a sea dike (the Hondesbosche Zeewering) where no dunes are present and coastal defence works are reinforced regularly to guarantee safety against flooding (Lahousse, *et al.*, 1993). The -20 metre isobath is farther offshore along this coast than the Delta and Waddensea coastlines, although the -10 metre isobath is closer to the

Figure 5.1 Geographical Units of the Dutch Coastal Zone.



Source: Lahousse, *et al.*, 1993.

present shoreline indicating a state of dynamic equilibrium with the high-energy wave-dominated character of this shoreline (Alphen and Damoiseaux, 1989). Consequently, coastal management along the Central Holland coast is primarily focused on maintaining depth of beach and the integrity of the dune system.

The Waddensea region consists of an island barrier of 23 sand dune islands and 14 major sand barriers that separate the Waddensea from the North Sea. The Waddensea is one of the last large and relatively undisturbed ecosystems in north west Europe, covering approximately 9000 square kilometres and extending 500 kilometres along the north west European coast. The area includes 1000 square kilometres of islands and 300 square kilometres of salt marshes and summer polders, forming a wetland of international importance (Reineking, 1993). The Waddensea region forms an ecological unity with the coastal zone of the mainland, islands and contiguous part of the North Sea (Meijer, 1993). While the area is relatively undisturbed, it is situated near the most industrially developed and populated countries in Europe and is exposed to a variety of threats that have had an adverse environmental impact resulting in loss, damage, and destruction of habitats. Since 1963, for example, over 40,000 hectares have been embanked and used mostly for intensive agriculture (Reineking, 1993). More recently, the intensification of uses in the coastal zone has resulted in the construction of ports, developing a tourist infrastructure, urbanisation, and industrialisation. The use and exploitation of the Waddensea also includes shipping, military activity, hunting and fishing, hydrocarbon and mineral extraction, and transportation pipelines (see Jong, 1993). Consequently, the Wadden Sea is under increasing development and industrialisation pressure.

5.2.1 Uses of the Coastal Zone.

Many parts of the Dutch coastal zone are important for their natural and ecological values. In the south these values culminate in the Eastern Scheldt, one of the last large estuaries of the North Sea that remains almost unspoiled by pollution and the internationally recognised Waddensea in the north. The coastal zone, however, is subject to a range of economic pressures and there is a strong interaction between

coastal development and sea activities. The North Sea is one of the busiest seas in the world, and approximately one third of all European shipping is routed through the Port of Rotterdam, which is the largest port in the world. The port has continually expanded to accommodate developing industries, such as the petrochemical industries between the 1950s and 1970s. In the early 1960s the port expanded into the *Maasplains*, a shallow part of the North Sea and a significant natural reserve, in spite of strong opposition from environmental groups. National government subsequently made the decision not to expand the port further south across important coastal lands, and a major project is now being developed to expand into the *Maasvlakte*, offshore. Dredging presents a serious problem because approximately $20x10^6$ cubic metres of polluted sand and silt must be stored, rather than dumped into the North Sea, and all possible land locations to store the silt are now used. Consequently, an artificial island (*Slufter*) is being constructed in the entrance of the waterway to Rotterdam harbour to accommodate the most heavily polluted sediment in the short to medium term.

The growth of the fishing fleet until the 1980s resulted in the over-fishing of species such as herring and sole, which continues today in spite of EU fisheries legislation. Besides a decline in fish stocks, fishing is affected by the loss of fish and fishing grounds from the closure of estuaries by the Delta Project, and threatened by industrial activities like aggregate extraction, increased shipping, land reclamation and industrial pollution.

The number of other activities in the coastal zone has increased in recent decades adding to potential conflicts between coastal users. Over thirty oil platforms connected by pipelines occupy the Waddensea, which has generated conflicts both with shipping and nature reserves. Hydrocarbon exploitation similarly generates conflicts with sand extraction because no dredging is allowed within one mile of submarine cables and pipelines (Wiggerts and Koekebakker, 1982). Sand extraction itself is not allowed above the -20 metres isobath because of concern over its impact on coastal protection schemes and fisheries, due to the damage to bottom fauna and ecosystems. These conflicts are only likely to increase because, as in the UK, the Dutch government promotes using sea based rather than land based sources.

The coastal zone in a limited sense, especially the chain of dunes and beaches, has a enormous recreational function. In the central region of the Netherlands, behind the dunes and broad beaches, is the *Randstad*: the conurbation of major Dutch cities including Amsterdam and Rotterdam in which the strongest recreational pressures exist. Recreation has damaged the dunes that are vulnerable because of their loose sandy soils and thin vegetative cover, bringing it into conflict with coastal defence, water production and nature conservation (Louisse and Meulen, 1991).

Bijlsma, *et al.*, (1991) identified the major uses of the dunes as coastal defence, tourism, military activities, industrial and harbour activities, forestry, agriculture, urbanisation, and water production. Approximately 60 per cent of the dune coast has a defensive function and the western part of the country depends on the dunes as a source area for drinking water. Prior to the 1850s, poor quality drinking water had been responsible for cholera and typhus epidemics leading to coastal authorities drawing their potable supplies from bore holes in the dune areas (Louisse and Meulen, 1991). Since the 1950s groundwater has been artificially recharged by pumping pre-treated eutrophic water from the Rhine, Meuse and polder canals, recovering it and biologically purifying it prior to consumption. An indirect, positive circumstance accompanying the development of water catchments has been the preservation of these areas by regional and national physical planners. There have been drawbacks including the lowering of the groundwater levels and the generation of concentrated nutrient-rich waters, which have destroyed ecological communities (Dijk, 1989). Nevertheless, recreation, urbanisation and infrastructural development have either been banned or strictly controlled in catchment areas and the dunes have remained relatively 'natural' as a consequence (Pieters, 1989).

5.2.2 Defining the 'Coastal Zone'.

Whilst the Dutch coastal zone is frequently referred to in literature, there have been few attempts to define it formally. Ruig (1995) described the entire western and northern areas of the Netherlands as representing the coastal zone, while the Interdepartmental

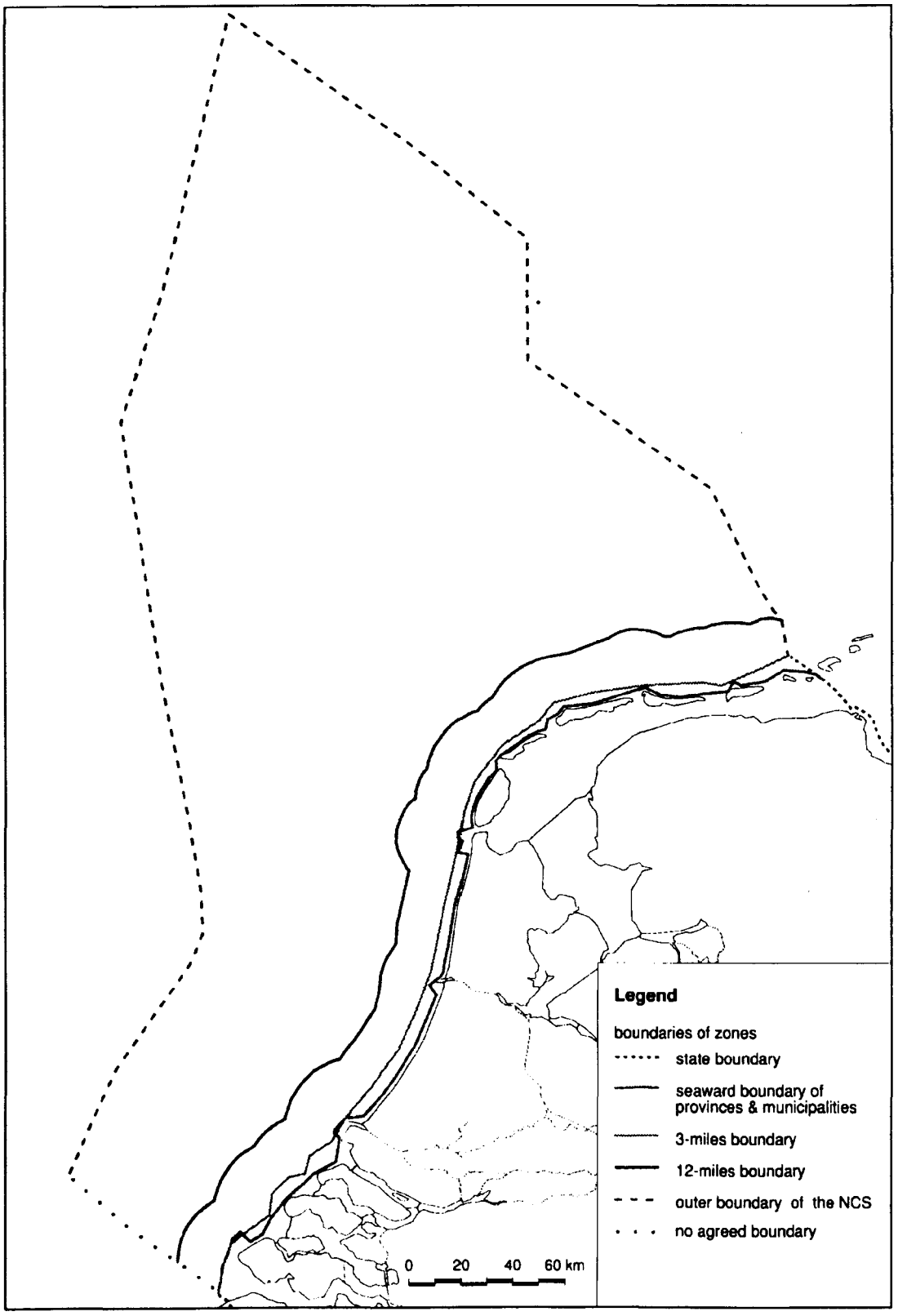
Co-ordinating Committee for North Sea Affairs (ICONA, 1992) described it as ending at the -20 metre isobath below mean sea level in the North Sea. Neither of these definitions has a statutory basis, or is sufficiently specific to be useful for coastal planners and managers. ICONA'S definition has certain applications, however, because sand extraction from sea areas landwards of this boundary is prohibited because of coastal defence safety, only being permitted for the maintenance of navigation channels.

In the marine portion of the Dutch coastal zone there are a number of statutory administrative boundaries (see Figure 5.2). Coastal municipalities and provinces' boundaries traditionally extend seawards one kilometre from low water (and water boards out to 300 metres) for the purposes of land-use control, although their influence in coastal planning is insignificant. A 3-mile boundary, based on minerals' mining legislation, regulates the competence of the Netherlands as a coastal state to license (and attach conditions to) the exploration and exploitation of hydrocarbon reserves. All EU member states are empowered to institute or maintain an exclusive 12 mile fisheries zone, which was legislated in 1983, and beyond the 12 mile boundary the Netherlands possesses the exclusive legal jurisdiction in respect of fishery matters.

During the 1990s management of the Dutch coastal environment has received a great deal of attention. Just as in the UK, a great number of government departments, QUANGOs and NGOs are involved in the coastal zone, but issues are approached sectorally, i.e. as land-use problems and marine management issues. Consequently, a number of developments in the coastal zone have given rise to conflicts that have not always been equitably solved, such as the industrial development of the Moerdijk, south of Rotterdam, which was enforced by economic interests. The constant struggle against the sea has also put its mark on the outlook of Dutch coastal planning, which is primarily focused on defence and management of the shoreline, resulting in the closure of the estuaries of the Rhine, Meuse and Scheldt as part of the Delta Plan.

Nevertheless, the framework of water management provides an effective base on which the more integrated land-use and environmental planning of the coastal zone could develop. CZM is perceived as a planning process in which both economic and ecological interests, and land-use planning and marine-use management systems, might

Figure 5.2 Statutory Administrative Boundaries in the Dutch Coastal Zone.



Source: ICONA, 1992, p. 6.

be more successfully integrated. Central government's direct involvement in coastal defence and other planning issues, suggests that CZM will develop as an extension of the shoreline management planning process that forms the foundation of Dutch coastal planning

5.3 The Administration of Planning Across the Coastal Zone.

5.3.1 The Political Framework.

Coastal and land-use planning takes place within the administrative organisation of the Netherlands, which is a constitutional monarchy with a parliamentary government, based on a unitary rather than a federal system. Sovereignty resides in the central government alone, while parliament grants powers to the lower provincial and municipal levels (Dutt and Costa, 1985). At the national level the Ministry of Housing, Physical Planning and the Environment (VROM) is responsible for the preparation of government policy on physical planning, but structural schemes for coastal defence are made by the relevant authorities of government. The need to achieve planning by consensus is widely recognised by all bodies directly or indirectly affected by physical planning at the coast, including VROM, L&V, and RWS (see Appendices). The planning and management of the coastal zones requires the co-operation and integration of policies from the numerous governmental organisations involved in planning the Dutch coast (Table 5.1).

Provinces, created in 1848, are widely considered to be the weakest level of administration because water management and administrative control over municipalities were originally the only rationale for their existence. Provinces have traditionally been the competent authority to establish and abolish water boards, determine the tasks undertaken and in which areas water boards should operate. Each province has its own technology agency, *Provinciale Waterstaat*, which is supervised by the V&W and its agency the RWS. In the late 1940s provinces were also given responsibility for structure planning and now are intermediaries between national

Table 5.1 Government Organisations Involved in Coastal Zone Management.

Organisation	Planning	Permitting/ Enforcement	Provision	Other
Ministry of Environment	National Environmental Plan And Programmes.	Special And Complex Cases.		Regulations Of Products. Measuring Air Quality.
Ministry of Transport and Public Works (*Rijkswaterstaat*)	Water Management Plans. Coastal Defence Council (POK) Member	Regional Authorities For National Water, Coastline And North Sea.		Measuring Water Quality. Measuring The Basal (1990) Coastline
Ministry of Agriculture, Nature Conservation And Fisheries	Nature Conservation Plan. Fisheries Management.		Planning And Developing Nature Preservation Areas.	
Ministry of Economic Affairs	Energy Plan.	Mining Activities.		
Provinces	Regional Environmental Plans Coastal Defence Council (POK) Chair	Larger Firms	Soil Sanitation, Waste Disposal And Incineration	
Water boards	Regional Water Management Plans Coastal Defence Council (POK) Member	Water Discharges.	Water Sewage Installations And Incineration.	Measuring Water Quality
Municipalities	Local Plans	National Regulations Small Firms	Waste Collection	

Source: Wintle and Reeve, 1994.

government and municipalities in physical and regional economic planning, housing and the environment. Provinces' physical planning function is co-ordinative and regulatory, overseeing the preparation and implementation of municipal plans and the actions of water boards to ensure their integration into an overall regional planning framework (Association of Water Boards, 1992). Consequently, the five provinces that have a coastal boundary are potentially significant actors when integrating national and local coastal planning matters at a regional planning level.

Municipalities take physical planning decisions in accordance with regional and national directives through the statutory development plan (*Bestemingsplan*). The plan consists of a zoning map specifying locations for future land uses, road locations and sites for planned public facilities. The plan is significantly different to others in the planning system because it is legally binding on the population. As a binding document it can be amended only through municipal legislative and provincial review processes (Dutt and Costa, 1985). Practically all physical planning decisions at municipal level are linked with land-use plans, which are highly prescriptive for land use in urban and especially rural areas.

Planning decisions reflect the views considered most desirable to the municipal level, based on its own responsibilities and political agenda. At this level physical planning is highly politically motivated. Consequently, one of the persistent difficulties is reaching agreement at local level for coastal environmental protection through the planning system, where government has adjudged nature conservation to be the primary aim in coastal dune areas historically used for recreation and tourism. Local interests often underestimate the function of nature in an area, and provinces have too little influence on a municipality's plans for economic development (Bijlsma, *et al.*, 1991). Yet without public support and understanding, nature conservation policies will not be accepted and cannot be implemented, particularly in popular coastal dune areas.

While they enjoy 'local autonomy', municipalities rely on national government for approximately 90 per cent of their funding and so central government has considerable influence (Faludi and Valk, 1994). The provinces and national government provide direction particularly in housing, planning and municipal development, and to achieve

this co-ordination is an essential element both vertically and horizontally. In spite of provinces and municipalities being tied to central government funding, Toonen (1987) questioned whether the system is centralised, because he considered the over-emphasis on hierarchical control counter-productive. Institutional fragmentation at the national level (enforced by ministerial responsibilities) creates additional distraction for municipalities, whose co-operation is essential for the success of policies. Toonen (1987, p.124) concluded "the hierarchical-centralistic image of the Dutch intergovernmental system is grossly misleading." An important feature of the political system is co-government, i.e. central government involving the provinces and/or municipalities in the formulation, and especially implementation, of its policies. Toonen (1990) further considered that unity could not be imposed on the state from above, but must come from a plurality of forces thrashing out their differences within an agreed framework. Supervisory powers are therefore used to facilitate bottom-up co-ordination and to exchange experiences.

Characteristically, the three tiers of government are autonomous and relations between them are determined by the decentralised organisation of government. The decentralisation of planning and decision-making is the reason why physical planning exhibits a diminishing measure of abstraction and a growing measure of elaboration down the line of administrative levels. Hence it is especially in the municipalities that various policies are translated into regulations directly binding on the citizen (Nieuwenkamp, 1985). Coastal planning initiatives are often prepared by a diversity of bodies and one of the most important aspects of national physical planning policy is the responsibility of government to foresee the consequences of various developments and prevent conflict as far as possible (Nieuwenkamp, 1985). The divisions between levels are fluid and based on the theory that optimal division of government tasks varies and changes with the preferences of individual citizens, economic circumstances and technological developments. The main features are interdependence, diversity, and dynamic interaction among relatively independent units within the state system as a whole (Toonen, 1990).

5.3.2 The Planning Framework.

The Netherlands has a sophisticated planning system in which all development is strictly controlled and physical, spatial and socio-economic elements of society accounted for. Throughout its evolution, physical planning has been influenced and constrained by the country's geography. The need for coastal protection against flooding, and the history of land reclamation from the sea, have meant acceptance of a strong government role in the process of physical planning, which makes Dutch planning exceptional. The nature of the system itself reflects the Dutch desire for legal certainty and detailed democratic control (Davies, 1988). It remains fundamental in the political culture throughout the entire planning system. Consequently, it is considered by some to be the most planned country among European nations (Dutt and Costa, 1985).

Planning is characterised by its highly regulatory and decentralised nature, and its highly political owing to the statutory basis of municipalities' land-use plans. Inasmuch as local authorities have been concerned with stimulating economic development they have, until recently, focused only on planning the developed coast (Mitchell, 1982). So far, the provinces have neglected their strategic potential to organise and encourage CZM, which is paradoxical because the planning framework is ideally suited to the adoption of integrated CZM. Physical planning aims to create the conditions that ensure the weighing of interests proceeds as effectively as possible, so that decisions produce the best possible results for space and society (Brussard, 1987).

Owing to the threat of the sea, land has always been the object of public intervention (or 'spatial ordering') and a land-use policy supportive of planning. In physical planning, the major objectives are reconciling and protecting land for economic development, agriculture, water supply, urbanisation and port facilities (Mitchell, 1982). A particular aspect of Dutch planning is ensuring that where measures are specifically designed for certain geographical areas, all the measures taken are seen as a coherent whole having considered the relationships between one another (Needham, 1988). Consequently, plans such as CZM initiatives are seen to establish "some broad frame of reference which gives guidance to lower-level activities. The assumption is that each level of

planning performs a strategic function for the level below and conversely is constrained by the strategic planning of the level above" (Diamond, 1979, p. 19).

Since 1949, land-use planning has been dominated by three main themes. Initially policy focused on post-war economic recovery, later attempting to counteract economic imbalance between the industrial urbanised western and northern provinces, and the agricultural southern provinces (Davies, 1988). The second theme, housing and urbanisation, concentrated on the problems of housing shortage, urban congestion and sprawl, and the need to conserve the remaining open space in cities. Finally, environmental concerns emerged as a strategic policy theme in the 1970s, especially related to industrial and urban development, the reclamation of the Ijsselmeer and flood protection schemes of the Delta project, from which a concern for the coastal zone has emerged. (For a detailed review of the development of planning in the Netherlands, see Brussard, 1987.)

Strategic planning, such as takes place in the coastal zone, accepts the influence of NGOs and other lobbies more readily than formal land-use planning. Each decision is rendered meaningful by analysing the issues in their widest context of choice, which also requires a co-ordinating approach that allows actors to take individual decisions and actions within the accepted framework. Such co-ordination is continuous, and because all actors want to keep options open, timing is crucial. Rather than a finished product, a strategic plan is a momentary record of fleeting agreements reached (Faludi and Valk, 1994). Nevertheless, strategic planning is conditioned by the powers of government to intervene, and while it should be noted that government influence is diminishing, the extent to which the Dutch environment is shaped by public intervention is still amazing (Faludi and Valk, 1994). The increasing power of the environmental lobby has been particularly demonstrated in the re-designing of the sluices for the Eastern Scheldt due to public opposition on environmental grounds, when a permanent barrage was intended.

Strategic projects are particularly relevant to the coastal zone because they set a context within which all planning takes place rather than defining the outcome of the planning process. Strategic projects are development schemes sufficiently important that each is

considered individually, such as the land reclamation scheme of Lake Ijssel and the Delta Plan project. Despite being large-scale, strategic projects represent *ad hoc* responses to problems and can be troublesome because they take a long time to implement; changing their surroundings and often involve the application of advanced technologies. Projects are also unique and complex, requiring the application of extensive project management and large budgets, which involve great economic risks. There is now concern to facilitate parliamentary control and prevent the vast over-expenditure that has occurred in the past (Faludi, 1982; Faludi and Valk, 1994).

Until 1986, no system existed to express key policy decisions at a national level. The *Planologische Kernbeslissing* (PKB) now enables national government to establish decisions and viewpoints on principles of public interest preceding the establishment of outlines and principles, with respect to national physical planning policy. PKBs also enable decisions on 'concrete policy plans', statements of general policy are considered to merit public and parliamentary input, important to national physical planning policy (Zwiep and Backes, 1994). PKBs are significant in the planning of the coastal zone because they can consider sectoral planning projects that cut across departmental boundaries and concern the policies of spending departments. More than a dozen schemes have been made concerning, amongst other issues, pipelines; water supply; military training areas; preservation of nature and landscape; outdoor recreation; and seaports (Faludi and Valk, 1994). Many of these PKBs therefore consider activities that occur in the coastal zone, but one also deals specifically with the development of the Wadden Sea (see Zwiep and Backes, 1994). Consequently, while in a formal sense no planning hierarchy is connected to a PKB or local and regional authorities technically bound by them, PKBs are highly influential in coastal planning.

In the 1980s environmental problems were increasingly perceived as interconnected aspects of whole ecosystems, particularly in coastal systems where a number of nature conservation areas were designated (Table 5.2). In the Netherlands, however, land-use (environmental) planning and nature conservation are the responsibilities of different Ministries. Since 1982, nature conservation has been overseen by L&V, while environmental planning has been the responsibility of VROM because town and country planning was a policy area that had a stronger impact on environmental issues

Table 5.2 Coastal Nature Conservation Areas in the Netherlands.

Area Type	Area (hectares)	Year of Designation
National Park		
De Biesbosch	7100	1987
Schiermonnikoog	5400	1984
Zuid-Kennemerland	2090	1990
Natural Monument		
Boschplaat	4400	1974
Dollard	5000	1977
Oosterschelde	24000	1990
Oosterschelde Buit	23810	1990
Waddenzee	154800	1981
Nature Reserve		
De Geul en Westerduinen	1681	1926
Dollard	4194	
Duinen Terschelling	9500	
Duinen Texel	2300	
Eierlands Gat Zeehondenreservaat	20000	1947
Griend	23	
Meijendel	2000	
Noordsvaarder and Oosterkwelder	2500	
Oerd en Steile Bank	1200	
Waddenzee Seal Reserve	397	
Private Reserve		
Noordhollands Duinreservaat NR	48000	
Schorren achter de Eendracht (Texel) NR	6700	1956
Voornes Duin NR	1400	1927

Source: World Conservation Monitoring Centre (1996).

(Maasacker and Arentsen, 1990). Although L&V and VROM produce important policy statements jointly, conflicts occur over nature conservation areas. At a national level, for example, the Ministry of Defence maintains a wish to extend military training grounds into existing conservation areas of the Wadden Sea (Gersie, 1991).

Concern about nature management and development has been expressed by the government through a number of policy documents including the Nature Policy Plan (1990) and Fourth Policy Note on Physical Planning (V&W, 1991). Through such documents, however, there has been a dramatic shift in environmental management as government policy has shifted from nature conservation to nature development (Sidaway and Voet, 1993). The necessity for recreation to accommodate conservation aims has produced doubts over whether conservation designations can achieve their goals (Salman, 1989). As policy has changed, it seems to have become increasingly controversial with serious conflicts between the government agencies responsible for nature, tourism and recreation, all of which are focused in the coastal zone. Uncertainty over the consequences of recreational use of nature areas has led to emotional agreements in which interests have become polarised, as in the management of the Voordelta (described below).

5.3.3 Coastal Zone Planning and Management.

Owing to the increasing coastal vulnerability to sea level rise in the long-term, coastal zone planning is an important aspect to be integrated with existing short-term plans for development of the coast. Coastal areas have a high ecological value, but the damage to the environment by major defence projects, recreation and industrial development have raised great public concern and interest in the conservation of the remaining natural resource within the coastal zone (Koekebakker, 1991). Originally it was argued that coastal protection plans could be integrated with regional economic strategies to create entirely new areas for urban, industrial, and recreational development, thereby side-stepping environmental legislation (Klein, 1993). Conservation of natural resources, however, is now being more extensively considered alongside economic developments. Increasing activity in the Dutch coastal zone (and the North Sea) has

identified a number of problems relating to different activities in the Dutch coastal zone, including the production of drinking water in coastal dune areas and aggregate extraction from off-shore. The processes already developing within the exercise of harmonising policies are doing so independently, in spite of being closely related.

5.3.3.1 Integrated North Sea Policy.

The V&W is accountable for North Sea affairs. Hence the RWS is the most influential organisation for coastal zone matters being responsible for national water policy including marine and coastal waters. All other Ministries co-ordinate (sectoral) policies that relate to the coastal zone through the agency (Table 5.1). Consequently, coastal zone planning issues rest with V&W rather than the more obvious VROM. This is not necessarily a problem because CZM is considered an extension of the planning process. The land-use planning system operated by VROM suffers similar difficulties to those in the UK, i.e. local political interference, jurisdictional limitations and no coastal zone planning remit. Conversely, the RWS operates planning mechanisms for shoreline management, which are increasingly being integrated into an earlier government initiative to harmonise North Sea policies. Consequently, the potential is there to extend the marine planning system to consider land-use planning issues, rather than *vice versa*, within a nationally organised framework, which is a major potential advantage for the Dutch administrative system.

The potential to develop an integrated coastal planning system in the Netherlands originated in 1977, when the government established an interdepartmental commission to co-ordinate North Sea affairs called ICONA. ICONA was required to advise the government on North Sea policy issues, and by 1981 it had prepared a report outlining the possibilities for harmonising North Sea policies, supported by a systematic inventory of administrative involvement and regulatory instruments available (Hoorne, *et al.*, 1985). The recommendations formed the basis for the government report, *Harmonisatie Noordzeebeleid*, in which the future North Sea policy was proposed. In this document the government indicated that it wished to promote an increasingly co-ordinated and balanced development of activities, but rather than being based on an unrealistic

comprehensive policy, it was based on an ongoing process of harmonisation that would offer the possibility to react flexibly to future developments.

In a 1983 report, a special North Sea Committee expressed its confidence in an action programme as far as making plans and regulations were concerned. There were doubts, however, about the feasibility of the plans for control and enforcement, and the necessary financial basis for implementation, not given in the government's proposals (Hoorne, *et al.*, 1985). The committee underlined the importance of the ecological balance in the North Sea and advocated the prevention of irreparable damage and irrevocable changes to the ecosystem caused by human activities. In terms of CZM it was a very advanced report, identifying environmental management needs from first principles and the problems of financing implementation. Unfortunately, the government chose not to develop an overall integrated North Sea policy, or to establish clear management priorities.

In 1982, when the ICONA report on North Sea policy was being considered, the National Council for Physical Planning (RARO) wrote to the government to advocate that special attention be given in the action programme to the physical planning of the coastal zone. This zone was defined as the territorial sea, the coastline and coastal provinces. The Minister responsible for physical planning, in reply, saw no need for such special attention because the existing framework for physical planning in the Netherlands already contained ample provision for the zone. Therefore no formal national CZM policy was developed. The Minister's response is understandable in a historic context. The Eastern Scheldt project was being completed in 1981, marking the successful conclusion of the Delta Project, which was a highly technological solution to environmental problems. The concept of holistic environmental management would therefore, not have enjoyed notable political support, especially from the Ministry that, by supporting it, would have lost planning authority to a *competing* Ministry.

The process of harmonisation was, in principle, the best solution to reach a coherent assessment of the various sectors and interests regarding the North Sea. In recent years the government has started to develop a more consistent North Sea policy and to harmonise its various policies, but the process is very different from the planning

process applied to land due to the specific features of North Sea uses. In the coastal zone, off-shore and on-shore developments compete with one another, so there is a growing support for the framework being developed within which the various developments on the North Sea can be harmonised or integrated (Koekebakker, 1991). Dutch coastal policies have changed since the 1970s from coastal defence (and, if possible land reclamation) to a more balanced approach that integrates the various human activities with a new national coastal defence policy. Hoorne, *et al.*, (1985) consider it uncertain whether the process of harmonising North Sea policy will be a catalyst in developing a coherent framework for sea-use management. Those initiatives focusing on specific coastal areas, such as the Voordelta project and Wadden Sea policy, remain *ad hoc* in approach, albeit supervised from within government.

5.3.3.2 1990 Coastal Defence Policy.

As well as the harmonisation of North Sea policies, much of the potential for an integrated CZM system in the Netherlands is based on a review and revision of the national coastal defence policy during the late 1980s. Until 1990 an *ad hoc* coastal defence policy was followed and management was undertaken only when the safety of the Polderland was at stake, or when special values in the dune area (drinking water supply areas, nature conservation) were threatened (Hillen and Haan, 1993). Within national coastal policy a distinction is necessarily made between coastal defence management (maintaining shoreface, beach and front dunes, sea dikes and groynes), and the management of the landward and marine areas. The policy for 'dynamic preservation', adopted in 1990 emphasises large-scale and integrated planning on a structural rather than an *ad hoc* basis (V&W, 1990b). This has meant that other planning issues could be considered for a particular coastal area, in addition to the defence requirement. While the emphasis on the Dutch coast will always focus on coastline management, the new policy directly incorporates aggregate extraction and recreation that expands coastline management into the coastal zone, and hence realises the potential for CZM.

Since the 19th Century the Dutch coastline's position (dune foot, high and low water marks) has been measured annually along a series of coastal profiles at 200 metre intervals (approximately 200 metres inland and 800 metres seaward) across fixed reference poles (beach posts). Through monitoring, the sand balance of the coastal system was revealed to be in a state of chronic erosion. Technical means to prevent sand dune loss had not stopped chronic erosion, merely protected the (landward) coastal zone above storm surge levels (Verhagen, 1991). In the North, for example, a structural loss of sand in the Wadden Sea had led to several islands being seriously eroded (Hillen and Haan, 1993). If no measures were taken against ongoing coastal erosion, much of the coastline would become unsafe, and hundreds of hectares of valuable dune area would be lost every decade. An accelerated rising sea level would exacerbate this problem. The public discontent over dune management led parliament to develop a long-term vision of erosion control in which socio-economic impacts would also be considered, before a choice of technical solutions and policy options could be selected.

To develop a range of technical solutions it was necessary to establish the range of freedom for the policy options, such as on sections of the coast with dikes and narrow dunes where coastal recession would be unacceptable. This was not a policy for discussion because 8 million people live in the Randstad, and the potential economic damage was estimated at 3 billion guilders (in 1990). In 1989, the V&W published a discussion document, *Kustverdediging na 1990* (Coastal Defence After 1990), which presented four alternatives: retreat, selective preservation, preservation and expansion seaward (see V&W, 1989). By retreat, coastal recession would only be counteracted at those locations where erosion threatened the safety of the polders, whereas selective preservation would protect those locations where safety of the polders was threatened, or where major interests in the dunes or on the beach might be lost. The option of preservation would guarantee the maintenance of the entire coastline on the basis of its 1990 location. Finally, the option of expansion seaward would see artificial defences extending into the sea at points of marked erosion, while elsewhere along the coast the present coastline would be preserved.

By early 1990 an extensive public discussion had been completed, the preservation policy was almost unanimously preferred and the government decided to stop any

further structural coastal recession. The policy choice is primarily aimed at ensuring safety against flooding and sustainable preservation of the values and interests along the coastline (Hillen and Haan, 1993). By allowing this choice, and a degree of flexibility, the 'preservation' policy became a 'dynamic preservation' policy, which marked a new era in coastal defence. The most important aspect of this choice was that the Dutch seaward boundary is maintained at a fixed position, thereby creating a basic provision for other functional uses in the coastal area (housing, recreation, drinking water supply and nature conservation). Another important aspect was the choice of sand nourishment as the primary technique for coastal defence (Hillen and Haan, 1993).

The practical implementation of the policy of dynamic preservation required an integrated approach with a number of government and non-government agencies working in close co-operation both in the monitoring and planning stages, and implementation and evaluation phases. Consequently coastal protection is now co-ordinated across the administrative jurisdictional divides of defence management and statutory responsibilities through the statutory provincial consultative bodies (*Provinciaal Overlegorgaan voor de Kustverdediging*; POKs). In practice the POKs deal with all matters relevant to the protection of the coast, and increasingly they have to take into consideration concepts of integrated CZM. Since 1995, all POKs have included representatives from coastal municipalities and in some cases, nature conservation organisations (Ruig, 1995). Concepts and strategies for CZM might be realised through POKs, particularly as the provinces (as the Chair) are responsible for co-ordinating physical planning. Currently, however, their competence extends only to coastal defence matters, and the majority of POKs are not considering their potentially wider role in CZM.

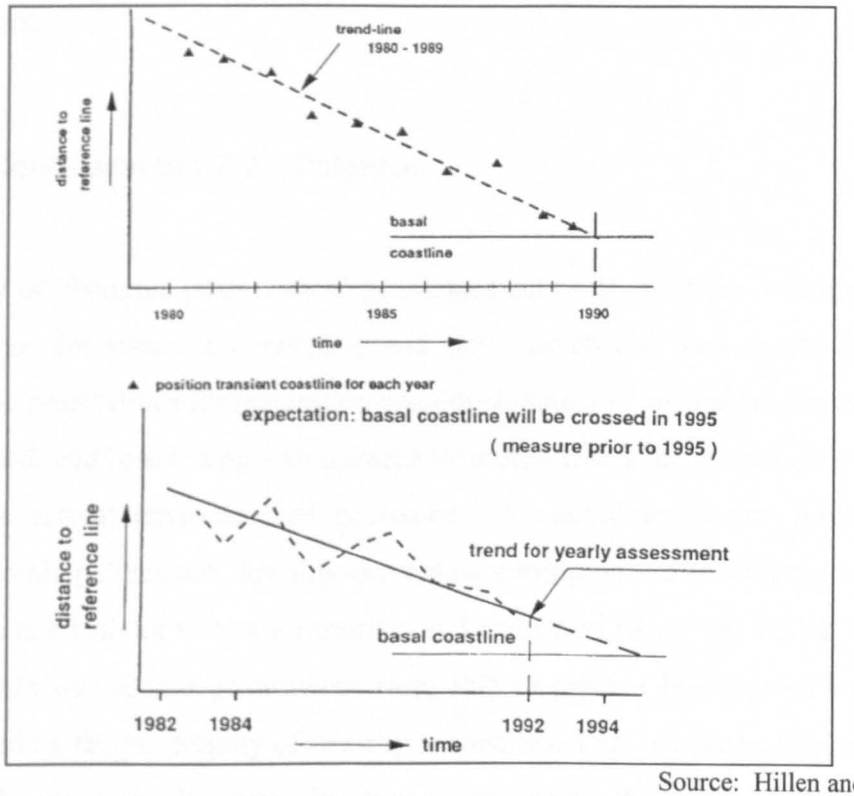
The new policy required that the 1990 coastline be defined. For this purpose the concept of the 'basal coastline' has been developed, which is the 'coastline to be defended' agreed by many coastal geomorphologists and within the provincial consultative bodies (Hillen and Haan, 1993; Ruig, 1995). The actual position of the coastline is calculated annually and compared with the basal coastline to establish whether the basal coastline has been encroached upon (Figure 5.3). The exercise is primarily aimed at identifying locations with structural erosion by calculating the current

position of the coastline with the trend in coastline development (Verhagen, 1991). Where erosion is seen to be occurring a beach nourishment programme is initiated to protect vulnerable coastline. While the policy it implies the preservation of the coastline, but does not mean that all dune damage from storm surges will need to be prevented in the future (Hillen and Haan, 1993). Simply those areas of the coastline where the trend in erosion is accelerating and giving cause for concern. Since 1992 the results of annual assessments have been presented in 'coastline charts' (Figures 5.4) and nourishment works planned accordingly.

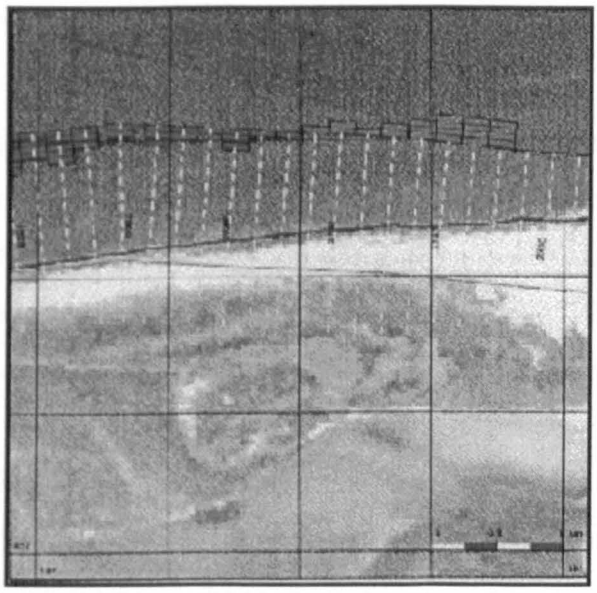
The 'dynamic preservation' policy utilises sand nourishment as the primary method of repairing coastal erosion in spite of concerns over the ecological impacts of nourishment, although knowledge of these effects (especially of repeated works) is poor. Since 1991, over 7 million cubic metres of sand have been added to the coastline, at an annual cost of approximately US$37.5 million (Ruig, 1995). An evaluation of nourishment as a management technique concluded that it was effective in coastline preservation and assisted recreation, natural values and the flood protection system (Hillen and Roelse, 1995). Consequently, during the coming decades, a yearly sand volume of $7x10^6m^3$ will be sufficient to compensate the nearshore losses through erosion. Sediment supplies seaward of the -20 metre isobath are considered sufficient for beach nourishment for at least the next 100 years, but total losses to the system, including the deeper part of the foreshore and the ebb tidal deltas, are larger than current nourishment volumes (Hallie, 1995; Ruig, 1995). This will steepen the coastal profile and increase erosion, particularly with a higher sea level and increased storminess predicted of global warming.

On the current calculation of sediment loss to the system, the present annual budget of Hlf 60 million will be sufficient but might have to increase significantly to protect recreation and nature development. Recent estimates put the costs as high as Hlf 200 million per year (Ruig, 1995). In 1994 approximately 22 per cent of the coastline had yet to satisfy the basal coastline standard, although the position of the basal coastline was insufficiently understood in some areas to be included in calculations. Nevertheless, the approach of the 'basal coastline concept' has proved a success according to the RWS, while refinement of the technique is on-going (Ruig, 1995).

Figure 5.3 Method to Calculate the Basal Coastline.



Source: Hillen and Haan, 1993.



Source: RWS, 1995.

The sediment balance is represented in 'coastline charts'. To represent the entire coastline on a scale of 1:250,000, 105 charts are requires each covering an area of 4 km^2. Areas of erosion are shown by red, landward-facing bars, and accretionary areas by green, seaward facing bars. The trend in sediment movement is shown by the number of bars at a particular measuring post.

The 1990 Policy works within its annual budget of Hlf 60 million, but not very much has been achieved beyond establishing the basal coastline. The main issue now is whether the policy can be advanced from coastline management to coastal *zone* management.

5.3.3.3 Conclusion to CZM's Potential.

The policy of 'dynamic preservation' guarantees the position of the coastline and offers opportunities for nature conservation and other functional uses of the beaches and dunes. The possibilities for restoration and development of natural resources are not yet fully realised, and broadening management measures across the coastal zone will help to restore the natural environmental processes. An additional result, however, is the pressure municipalities and developers are now putting on the provinces to develop the dune areas and inshore waters for tourism and recreation (Ruig and Hillen, 1997). The water boards and central government were able to prevent building initiatives on the dunes based on the uncertainty of security against flooding. Consequently, the stress on the coastal zone is rapidly increasing, particularly where the threat of erosion has been classified 'minimal' in the annual reports.

Experience since the introduction of the 1990 Policy, suggests that increasing attention is being given to recreation, possibly at the cost of the importance of nature. Doubts have arisen as to whether the National Park designation (under the Nature Conservation Act) still serves nature conservation and development (Salman, 1989). The worry is that recreation will increasingly carry more weight and even more stringent safeguards will be required. Plans for stimulating local economies in preference to nature conservation interests might potentially be favoured by authorities responsible for physical planning. An integrated CZM plan could be subverted at the municipal level into nothing more than a means for constructing new urban developments. A positive government strategy is therefore essential to avoid this situation and maintain the co-ordination between planning, the environment and the economy. Coastal policy in the Netherlands will have to become comprehensive, dealing with the entire coastal zone (Ruig and Hillen, 1997). National policies on physical planning and integrated water management

together with the national policy and the policy of dynamic preservation, form powerful tools for sustainable coastal development. Initiatives to plan the coastal zone, including the Voordelta plan, can be judged within the context of this coastal vision.

5.4 CZM in the Netherlands: The Voordelta Case Study.

5.4.1 Introduction.

The Netherlands contains the Rhine, Meuse and Scheldt, all of which enter the North Sea in the Delta Region of the provinces of Zeeland and South Holland. Following catastrophic flooding in 1953 the Delta Plan was undertaken to redevelop the regional infrastructure lost and to protect the region (permanently) from future flooding.

Owing to the length of time involved in the construction phase of the various projects (described below), changing planning values have prevailed in different stages of implementation. With the Delta Plan completed in 1986, these changing planning values have culminated in the Voordelta Plan (*Integraal Beleidsplan Voordelta*) that is seeking to resolve socio-economic and environmental conflicts within the coastal zone through consensus planning.

The Voordelta Plan has been initiated since the statutory framework for coastal environmental planning was established, and it therefore represents a functional case study to identify the organisational structure of coastal zone planning and management in the Netherlands, and assess the potential for effective integration of coastal management organised through that system. Through a comparative analysis of the Dutch and UK systems, in which crucial differences of approach are made apparent, the case study assists in the principal aim to establish whether the UK government's desire for a voluntary non-statutory approach through an enabling authority fulfils its ambitions for an effective area-specific coastal management strategy.

5.4.2 The 1953 Delta Plan.

The Delta Region was traditionally protected by narrow dune belts and extensive dikes, but these had fallen into disrepair in the 1930s due to the Depression (Colijn, 1990). Efforts to heighten the dikes were hampered because many buildings stood on or near them and would have involved time-consuming and costly relocation. Some work was accomplished after the war as a project to close the breaches in the dikes surrounding the island of Walcheren resulting from Allied bombing in 1944. Walcheren had been exposed to the tides for nearly a year when the breaches were closed using specially designed concrete caissons, which was a method later perfected for large-scale projects, that has been employed repeatedly since (Dutt and Heal, 1985).

In 1950 the Brielse Maas near Rotterdam was also dammed using caissons, over which a new highway was constructed joining the islands of Rozenburg and Voorne, and shortening the coastline by nearly 40 kilometres. In 1952, the Braakman (an inlet of the Western Scheldt) was dammed using culvert caissons, through which the tide flowed freely during construction. Land for 30 new farms was reclaimed, road connections improved between east and west Zeeuws Vlaanderen, and the coastline again shortened. These projects established a foundation for planning the technical projects of the Delta Project, which was initiated by disastrous flooding.

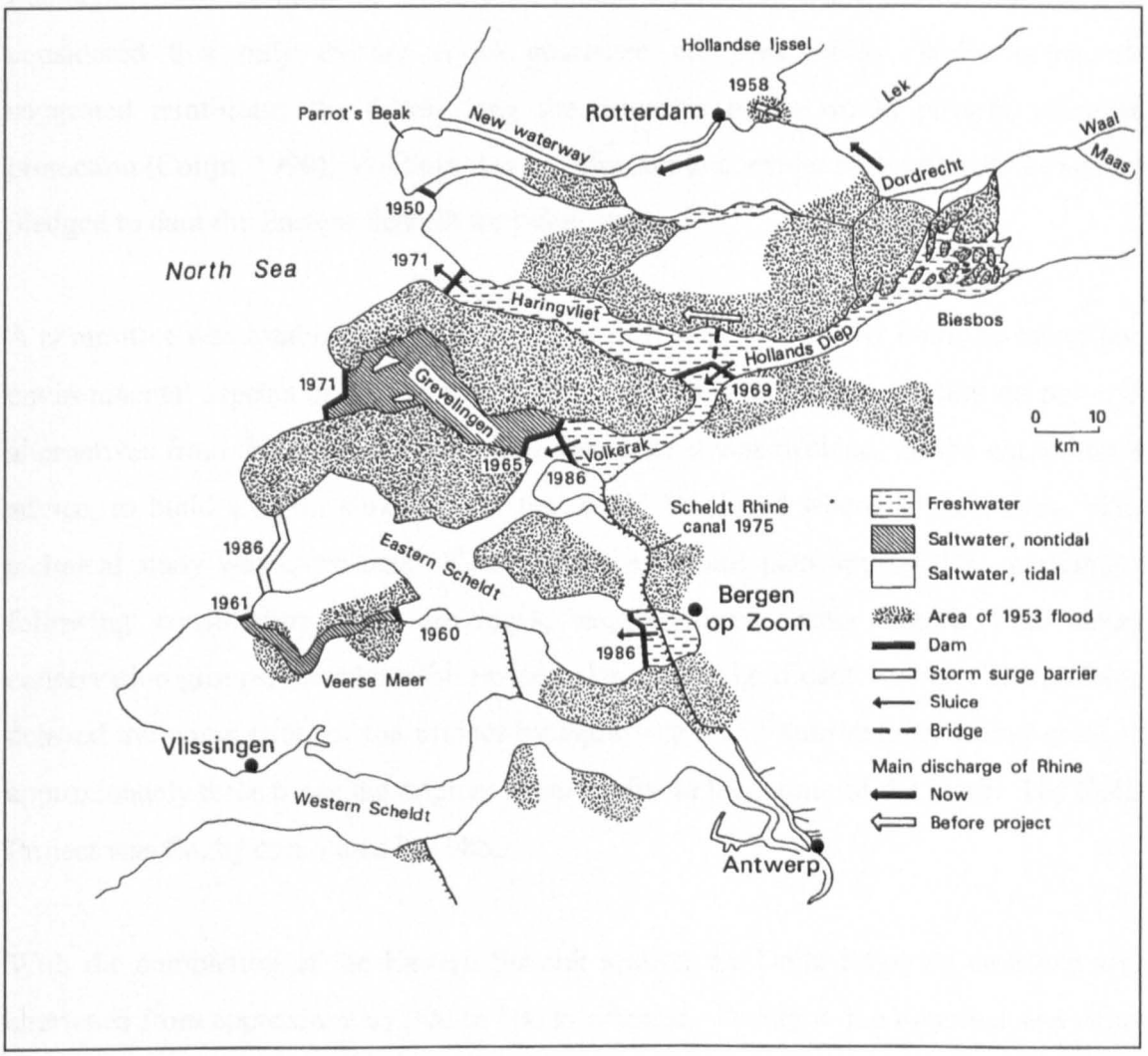
The flood of 1953 resulted from gale-force north-westerly winds associated with a deep cyclone over the eastern North Sea, preventing the tide from ebbing, and causing a storm surge in which water levels rose up to 3.6 metres above the danger level. On the night of 31 January 1953 the sea inundated 160,000 hectares of land through 67 major and 495 minor breaches. There were 1,835 fatalities, 72,000 people left without homes, 47,000 buildings damaged or destroyed and 200,000 livestock killed (V&W, 1990a). The flooding threatened the densely populated cities of Rotterdam, the Hague, Leiden and Delft. In addition land below sea-level remained covered by marine sediments destroying agricultural fertility, and tidal action further widened breaches in dikes. It was imperative that repairs be made as quickly as possible.

On 21 February 1953 the Delta Commission was created to determine the best means of preventing a recurrence of the flood. Within a year all the breaches in the dikes had been repaired, and the flood crisis became the main impetus in initiating a comprehensive flood control project for the Delta Region (Dutt and Heal, 1985). Two proposals were considered: raising the height of existing dikes, or damming the sea arms of the deltas altogether. The Commission recommended the latter to parliament. In 1958 the government passed the Delta Act, approving the project. The 1958 Delta Project Act included closing four broad, deep sea inlets at Haringvliet, Brouwershavense Gat, Veerse Gat and the Eastern Scheldt. A storm surge barrier was to be built across the Hollandse Ijssel and secondary dams on the Zandkreek, the Grevelingen, and the Volkerak. In addition, the New Rotterdam Waterway and the Western Scheldt (providing access to the ports of Rotterdam and Antwerp respectively) were to be left open but the dikes paralleling the waterways were to be strengthened (Figure 5.4). With the eventual completion of the project, the coastline was to be shortened by almost 800 kilometres, and most existing dikes were to be reduced to secondary defences along non-tidal or controlled tidal waters, and would only be required should a large dam be breached. Consequently, the Project aimed to reduce the frequency of inland flooding to a statistically average possibility of 1:10,000 years (V&W, 1990a).

Scheduled parts of the project were started immediately after parliamentary enactment, and the first completed was the Hollandse Ijssel storm surge barrier protecting Polderland in the western Netherlands. The initial large-scale projects of the Delta Plan were carried out during the general and rapid economic expansion in the early 1960s. Technological progress achieved during the earliest stages appeared to offer a solution to every problem and little thought was given to the ecological value of the areas affected by the works. The original plans had been developed to consider predominantly technical aspects of coastal defence, and redeveloping agriculture, industry and shipping. Until the mid-1970s no changes were sought due to the public demand for safety and trust in planners' solutions.

During the late 1960s, doubts emerged as to whether the continual exploitation of natural resources was the best way to achieve sustained economic growth. This coincided with work started on the most difficult part of the project to dam the Eastern

Figure 5.4 The Delta Project 1958-1986.



Source: Jones, 1997, p. 302.

Scheldt. Supporters of the plan argued for the protection natural ecology of the area. The actual construction of the dam, on a 9.6 kilometre stretch of the estuary, started in 1968 in accordance with the 1958 Project Plan. By 1973, the final 3 kilometres was to be dammed but a heated controversy surfaced between environmental groups, the shellfish industry who vehemently opposed the closure, and the government planners. Planners upheld the need for security for human habitation, while environmentalists of considered that only closure could guarantee complete safety, while opponents suggested reinforcing the dikes along the estuary's banks would provide adequate protection (Colijn, 1990). Politicians were reluctant to consider such alternatives having pledged to dam the Eastern Scheldt for public safety.

A committee was established by the Minister of V&W, to consider both the safety and environmental aspects of closing the estuary and to advise the government on possible alternatives from the original plans. One year later it was decided, on the committee's advice, to build a storm surge barrier that could be closed whenever necessary. The technical study was completed in 1976 and the revised plan approved by parliament following consultation with provinces, municipalities, water boards and nature conservation groups, for whom the revised plan was a significant victory. The revision delayed the completion of the project by eight years, and substantially raised costs to approximately three times the original estimate due to the nature of the work. The Delta Project was finally completed in 1986.

With the completion of the Eastern Scheldt section the Delta Region's coastline was shortened from approximately 900 to 100 kilometres. Owing to the revisions and delay in the project the Netherlands will not fully appreciate the impact of the works, or subsequent management needs, for many years to come. Nevertheless, a number of issues and tangible benefits can be identified and several conclusions drawn. Primarily, the Delta Region has been made safer and the shortened coastline is much easier to maintain. Following World War II the penetration of saline water from the North Sea reached 24 kilometres up the Rhine, which adversely affected agricultural activity and Rotterdam's domestic water supply. Completion of the project has halted this incursion, and is gradually producing an increasingly less brackish north basin of the Delta,

alleviating agricultural irrigation problems and providing the south western part of the country with a freshwater supply (Dutt and Heal, 1985).

Tidal current in the ebb-tidal delta complex decreased by 50 to 90 per cent as a result of the construction of the dams. The dramatic increase of tide-driven sediment transport mechanisms resulted in the ebb-tidal delta becoming detached from the inner-basins and moving offshore. Wave action became the predominant hydraulic force that eroded the Delta rim and reworked the sediments on the seaward side of the ebb-tide delta into large shore-parallel intertidal shoals (Louters, *et al.*, 1993). In the last ten years the Eastern Scheldt shoals have increased from 8 to 12 kilometres in length; vertical growth is stabilised at mean sea level by currents, but they continue to develop horizontally in a south westerly direction (Alphen, 1995). The new hydraulics have also resulted in sedimentation of former tidal channels. In the Eastern Scheldt, for example, the average flow rate decreased by 40 per cent and salt marshes and tidal flats have been eroded as the geomorphological processes strive to restore equilibrium. It has been estimated that during the next 30 years approximately 15 per cent of all salt marshes and tidal flats shall disappear (Klein, 1993).

The Delta Plan was a massive undertaking, but few technological problems were encountered. New construction techniques were employed that will form the basis for future flood control and land reclamation projects. The successful completion of the Project establishes that, if modern technology and public will are combined with a scientifically based long-term planning process, many natural calamities can be permanently averted, to create a hazard-free environment (Dutt and Heal, 1985). It must be noted, however, that coastal defence is a national planning imperative and the population is supportive of a highly planned and regulated environment. Even so, the certainty of technocratic planning is increasingly being supplemented by more social and holistic environmental planning.

As part of the plan, roads were built over each dam and a highway system established to link the islands together and to the mainland. Previously Zeeland had been isolated and reliant on fisheries and agriculture and in the 1950s the government identified the Delta Region as a 'stimulus area' because it was considered economically depressed. The

construction works of the Project and new transport infrastructure significantly aided Zeeland's potential economic growth, and its current economic potential compares well with the rest of the country (Dutt and Heal, 1985).

To the north-east of the Delta Region is the Randstad, where 46 per cent of the population lives. The government is trying to discourage further urban growth in the heart of the Randstad or in the undeveloped 'Green Heart' of the central Netherlands. The safety guarantee and increased accessibility have thus augmented the region's capacity to accommodate population overspill. Industrial and commercial activity, with accompanied urban development, now challenge traditional agricultural land-use.

The impact of the Works on the water budget of estuaries has also impacted on local economies. Following the completion of the Veere Dam in 1961, for example, the fishing fleet of Veere was moved to other ports because the town no longer had access to the sea (Colijn, 1990). When planning the redevelopment of the Delta Region, the newly created lakes were considered suitable for water sport and recreation. Previously flooded foreland areas were considered suitable for agriculture, but only those areas that could not be employed for any other 'useful' purpose were designated for nature reserves. Recreation and tourism therefore represent a major source of local income and most municipalities have profited from this trend (Alphen, 1995). Medieval towns and villages like Middleburg, Goes, and Veere are now promoted as tourist areas near Zeeland's beaches and the spectacle of the Delta Project itself.

The Delta Plan's original civil engineering plans were based solely on flood protection and public safety, which did not consider nature preservation a part of national policy. This approach led to serious impacts on the environment (see Carter, 1989). The revision of the plan in the mid 1970s occurred because of the heightened environmental consciousness of the population. The revisions in the Eastern Scheldt meant that valuable sea fisheries and shell fisheries were not lost. In other areas, however, the environmental implications of the project has been less positive. In the *Haringvliet* sedimentation from the heavily polluted rivers have destroyed aquatic ecosystems, and heavy metal and organic micro-pollutants in mussels and fish still exceed standards acceptable for consumption. While plans have been developed to clear these sediments,

such efforts will only be useful if the river is sufficiently pollution free (Ronde, 1989). Bird populations have experienced a marked decline along dammed estuaries because those species feeding on tidal flats went elsewhere. Similarly, many migratory fish species, whose spawning grounds were disrupted, suffered collapses in population; non-migratory species experienced a progressively older population structure (Carter, 1989). The ecological impacts of the Delta Project have not all been negative. The morphological changes in front of the Delta (the Voordelta) have created a lagoon-like environment with silty intertidal flats and marshes. The out-flowing Rhine supplies nutrients to the ebb-tidal delta at the Haringvliet sluice. The sheltered areas have developed a rich benthic life, making them important nursery areas for juvenile fish and feeding areas for breeding and migratory birds. It is hoped that the area might eventually support a reintroduced seal population (Klein, 1993).

In undertaking the Delta Plan, the Dutch set down very definite objectives, foremost of which was flood control. If achievement is measured in terms of meeting objectives, the Delta Project has been an unqualified success. The commitment to the project was made when the Dutch economy was growing rapidly. Dutt and Heal (1985) concluded that any new large-scale project would be impossible to initiate following the depressed economics of the 1980s. The completion of the project enforced ecological changes on ecosystems, habitats and landscape that placed pressure on the environment. Human activities like coastal fisheries, transport infrastructure and recreation have intensified and economic interests increased. The increasing interaction between human activities and nature values have created new conflicts when planning and managing the area.

The government has expressed a requirement that the coastal zone must retain its agricultural function, while the sea coast (with its wide area of dunes) and the inland lakes offer recreational possibilities. Management action now is required because the ecosystem is vulnerable and cannot sustain intensive use indefinitely, while economic interests require certainty. The national government and provinces in the Delta Region are now developing integrated policy plans for the landward coast and ebb-tide areas (the Voordelta). These strategies aim to plan and manage a larger number of functions whilst paying closer attention to how the natural features of the area could be developed.

5.4.3 The Integraal Beleidsplan Voordelta.

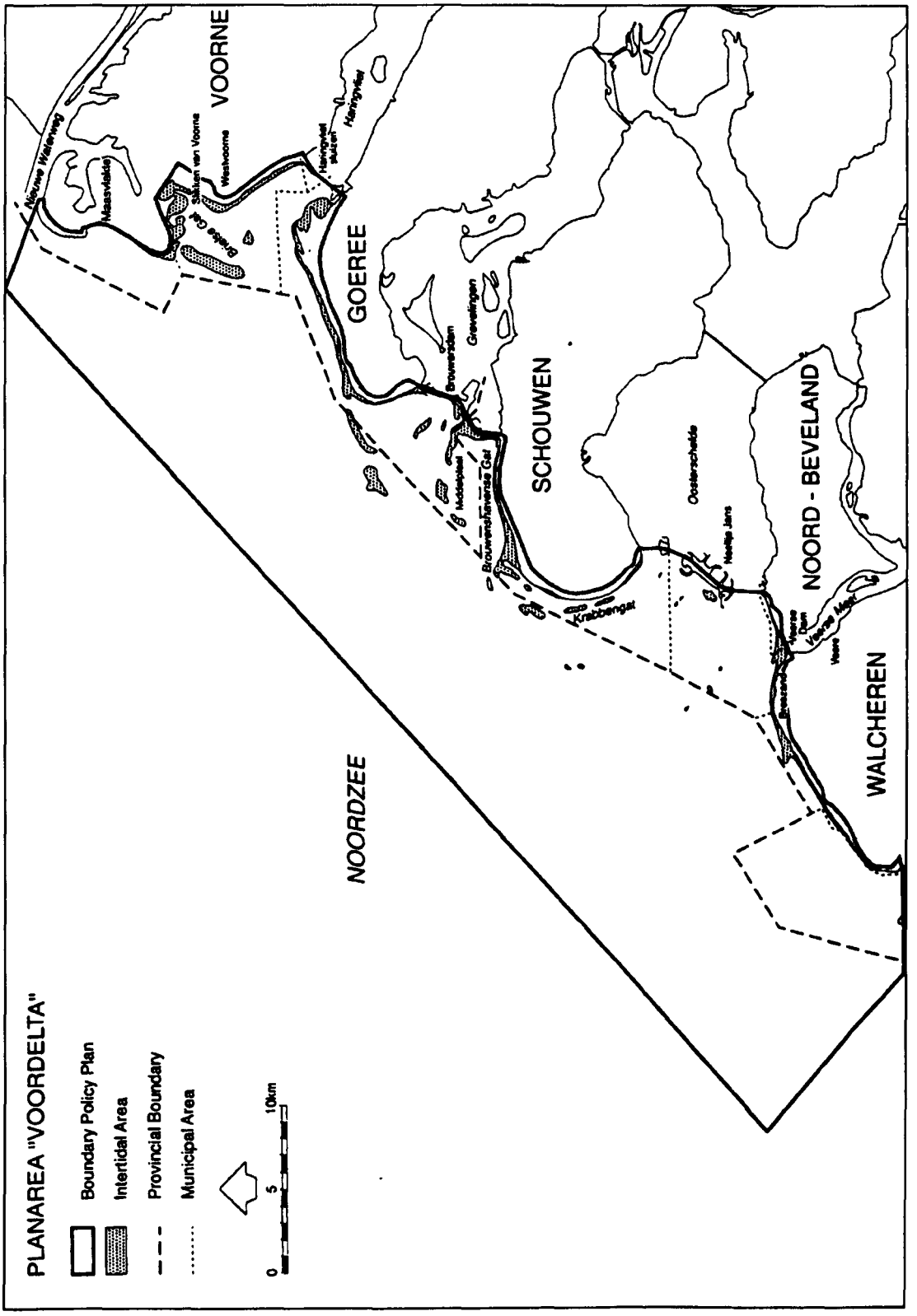
5.4.3.1 The Voordelta.

The closure of three major estuaries in the Rhine Delta since 1953 has created large-scale morphological adaptations to the new hydrodynamics in front of the dams and sluices. Likewise, the construction of the Maasvlakte in the Port of Rotterdam, to the North, has influenced the coastline through local accretion and erosion modifications. The result of these changes has been the development of a new intertidal area similar to the Wadden Sea, which is called the Voordelta (i.e. 'in front of the Delta') located in Dutch territorial waters (Figure 5.5). The morphodynamic system and plan area is bounded by the -20 metre isobath (i.e. the extreme wave base) and the inner limit of the sea defences, which comprises 900 km^2 of the former over-lapping, ebb-tidal delta complex and adjacent beaches and dunes (Alphen, 1995).

The Voordelta is now a dynamic and fast developing part of the coastal zone in the North Sea. The landscape varies from open sea, intertidal areas with sand banks, mudflats and saltmarshes, to beaches and dunes with dune slacks. Water conditions vary from salty to brackish or fresh in the dunes and associated inland waters. The morphological adaptations are now slowing down, resulting in only minor modifications from the present conditions such as the inner shoals eroding while the connecting tidal channels along the island promontories remain open. International measures to improve water quality of the Rhine are also expected to lead to a 30 to 50 per cent reduction of contaminants and nutrients (Alphen and Hoozemans, 1991). Consequently the physical environment is now considered to be in a state of dynamic equilibrium in which human interaction is more likely to effect changes in the environment than natural processes.

The development of the Voordelta has created new ecological opportunities (habitats, ecosystems and landscapes) while human activities (fisheries, tourism and recreation) have intensified and economic interests (industry, urbanisation and transport

Figure 5.5 The Voordelta Coast.



Source: Sidaway and Voet, 1993.

infrastructure) have increased. Owing to the Delta Plan and selective closures of other fishing grounds in the Netherlands, including the Wadden Sea and Ijsselmeer, overall fishing pressure has increased in the area (Alphen, 1995). The commercial value of fisheries landings in 1991 was approximately 135 million guilders, which equates to 700 jobs, but this is probably its maximum. The tourism industry in Zeeland will also expand during the next decade from accommodate 150,000 sleeping places (or 10 million nights per year) in 1991, to 168,000 sleeping places by the year 2000. It is also expected that total recreational spending will be approximately 1,260 million guilders, supporting 10,500 jobs by the end of the decade. Other activities in the Voordelta include sand extraction, which is licensed to maintain the Slijkgat (the entrance to the fishery harbour at Goedereede) to a maximum of 250,000m^3 per year (Alphen and Hoozemans, 1991). In past years wind turbines have been placed on the Neeltje Jans and Roggenplaat islands in the Eastern Scheldt and along the Maasvlakte. There is no hydrocarbon production near or in the plan area, but exploration licences have been issued for parts of the mouth of the Harlingvliet. Shipping is predominantly situated outside the plan area (to the ports of Rotterdam and Antwerp), but the possibility of accidental pollution in the area remains a threat. Finally, above the coast of Walcheren particularly, military training flights occur with the associated disturbance.

5.4.3.2 Management Planning in the Voordelta.

Conflicts in the Voordelta include those between fishing and recreation, and between different forms of recreation, competition for benthic fauna between fishing and birds, disturbance to wildlife from a variety of human uses, and pollution and their impacts on the marine ecosystem. It was considered that without additional measures the increasing pressures from human activity would negatively impact on natural development and restrict the development potential of new functional uses. In addition, external developments including sea level rise, shipping accident and developments in recreational demands, would further damage the Voordelta's environmental resources. Given the unique morphological developments offshore and the conflicting claims of nature conservation, fisheries, recreation and tourism, in 1988 the Dutch government announced the initiation of an integral policy development project for the Voordelta. At

the time, neither local authorities nor interest groups asked for a policy plan. Coastal municipalities, dependent on income from fisheries and recreation, were not persuaded to take action to preserve nature values. Fisheries and recreation interest groups were also happy with the amount of freedom they had in exploiting the Voordelta's resources.

In April 1989, the RWS invited other government departments and provincial and municipal authorities to participate in a steering group (*Bestuurlijk Overleg Voordelta*; BOV) to draw up a policy plan that integrated all management interests in the Voordelta. Integrated policy-making is a complicated process, in which many interest groups and administrative bodies at different levels participate in unpredictable ways, hence the planners stressing the importance of inventing *processes* of policy planning that secure co-ordination and integration (Weale, 1994). The most important requirement was the willingness of all participants to implement their part of the agreement and to create willingness at the final stage. Broad involvement was required from the initial defining of the plan's aims. The main task of the BOV was to prepare the policy plan and approve it on behalf of their respective administrations.

The RWS had a predominant role in the management planning of the Voordelta because it already had an in-depth knowledge of the area, gained during the construction of the Delta Project. The involvement of national and provincial administrations was considerable, with the 30 member strong BOV comprising four government ministries, two provinces, the municipalities and water boards, and was chaired by the North Sea Directorate of the RWS, which also provided the secretariat. It is worth noting that no NGOs were represented on the BOV because it was decided to rely on consultation to obtain their views (Sidaway and Voet, 1993). The BOV was advised by an executive committee (*Ambtelijk Overleg Voordelta*) of officers drawn from the ministries and one staff member from each province. The key role, however, was undertaken by the project group (*Projectgroep Voordelta*) that did the detailed planning. While the municipalities were asked to select one representative for the project group, they all wished to participate and could not make a choice. Consequently, municipalities were informed of the results of project meetings, but did not participate (Alphen, 1995). Representation throughout the policy development process is summarised in Table 5.3.

Table 5.3 Representation Throughout the Policy Development Process.

(χ) = number of members	**Government National Ministry Level**	**Agencies**	**Provincial Level**	**Local Level**	**Interest Groups**
Initiative	Verkeer en Waterstaat (V&W)				
Problem Definition Setting of Objectives Policy Statements Decisions on Preliminary Draft Plan	*BESTUURLIJK OVERLEG VOORDELTA* (Policy Development Group) V&W (Chair & Secretary) LNV (1) EZ (1) VROM (1)	Rijkswaterstaat (6)	Province Zuid Holland (1) Province Zeeland (1) Stuurgroep Oosterschelde (1)	Municipalities (11) Recreatieschappen (3) Waterschappen (5)	
Co-ordination	*AMBTELIJK OVERLEG VOORDELTA* (Officers' Group) LNV (1) EZ (1) VROM (1)	Rijkswaterstaat (Chair & Sec.) (7)	Province Zuid Holland (1) Province Zeeland (1)		
Plan Preparation	*PROJECTGROEP VOORDELTA* (Project Group) LNV (1) EZ (1)	Rijkswaterstaat (Chair & Sec.) (5)	Province Zuid Holland (1) Province Zeeland (1)		

Source: Sidaway and Voet, 1993.

The design of the Voordelta Plan's policy development structure is perhaps best described by Healey's (1992) Hierarchy, Co-ordination and Broadly Based Interest Model within which a series of action-centred networks has considered management issues (see Chapter 3). The planning model suggests the establishment of a coherent hierarchical system of communicative planning in which central government is the locus of policy control and each level articulates its strategies and plans within the context of the level above. Healey (1992) suggested that this model would accommodate active public involvement in order to relate decision-making to those most affected by the issues in question, although she considered it a difficult compromise to achieve through issue-based representation in policy and plan preparation.

From the start of the project an integrated policy approach was adopted to provide a coherent structure for the activities of the project group and the decision-making of the BOV. The plan's aim, described in the Fourth National Report on Physical Planning, was the preservation of the natural (physical and ecological) processes that would ultimately result in a new equilibrium between the changed hydrodynamics, morphology and ecology. Within this context, the plan was to indicate how fisheries and recreation could be continued and further developed (Alphen, 1995). Van Alphen (the plan's Project Manager) and his co-author Hoozemans (1991, p. 2722) described the objective of the integrated policy analysis as being "to generate a series of policy measures in a framework of four portions (Nature, Fisheries, Recreation and Preferred) in order to discover an optimal balance in the national and socio-economic development of the plan area." From the Voordelta Plan's initiation, however, fishery and recreational groups were similarly unconvinced of the need to prepare a plan, and were very unhappy that the Plan's aim was already fixed in the Fourth National Report on Physical Planning (Alphen, 1995).

Before any policy analysis the BOV agreed the key sectoral interests of the Voordelta, possible local policy objectives and major conflicts to be considered, and established action centred networks (see Chapter 3) to consider managing the Voordelta for the benefit of each interest alone. ACNs are composite matrix structures based around an administrative lead and multi-agency steering group who oversee the work of these projects. A major aim of an ACN is to achieve consensus, because it is crucial to the

initiative's success that participating organisations are prepared to abide by the decisions of the network. Information was based partly on separate informal contacts between the organisers of the project and interest groups. Fishing interests had submitted maps detailing important fisheries, and recreation groups produced an extensive inventory and alternative policy plan (Alphen, 1995). While this decision-making within the ACNs obviously incorporated consultation, the absence of any local interest groups on the BOV simply reinforced the centralised planning approach that in part defines the Voordelta Plan.

Nevertheless, each ACN identified sectoral interests to have particular management needs, for example, nature and natural development required the plan to conserve the natural morphological and ecological development of the Voordelta, and investigate the possibilities of taking measures to stimulate nature development. Similarly, recreation would require the plan to provide for the maintenance and improvement of recreation and tourism interests generally, and the creation of year round facilities that would also include the development of special projects at Brouwersdam (South) and Neeltje Jans for intensive recreation facilities. Finally, the management requirements for fisheries were identified as needing to secure adequate water quality standards for shellfish and also the possible development of mussel-cultures in the Voordelta, while maintaining fish stocks in the North Sea. Consequently, the BOV pursued what it considered the most important management planning interests, i.e. nature and natural development, recreation and fisheries.

Given the main aim of the plan is to preserve the natural processes of the Voordelta and manage fisheries, recreation and nature, a preferred policy option (PPO) was developed that represented a compromise between all interests. In addition, three alternative approaches were formulated that favoured the management of each of the main Voordelta uses that might also achieve the plan's aim. The most pertinent measures outlined in the PPO were the closure to recreation and fisheries of sensitive areas (shoals, tidal flats, accretionary beaches and shallow waters adjacent to a distance of 400 metres from LWM) during low tide. Alongside sensitive areas, water sport launch sites were to be removed and elementary recreational facilities developed along non-sensitive

beaches. The PPO also sought continuation of fisheries and the development of aquaculture, except in sensitive areas (Alphen, 1995).

At this early planning stage, the PPO was considered a satisfactory compromise by the RWS and the fishing and recreation sectors because the proposed restrictive areas for nature conservation were small, tide dependent and difficult to maintain. The Provisional Advisory Council for Outdoor Recreation that represented recreational interests in the Voordelta, for example, was satisfied with the original PPO because it compared favourably with their own management suggestions previously submitted to the BOV. When the Project Group analysed the PPO and its alternatives, the PPO and Nature Policy Option were considered the only options able to conserve the expected natural development of the Voordelta. Of these two, the PPO enabled recreation and fisheries to be developed further locally, by temporal and spatial zoning, and was therefore considered a suitable plan to publish for public consultation (Sidaway and Voet, 1993). Following the BOV's approval of the PPO, it was published in June 1991 as a Proposed Policy Plan, for public consultation. The draft plan initiated comments from a wide variety of NGOs, all competing for amendments that would favour their own interests. Success at this lobby stage depended on their political and organisational abilities as much as the strength of their arguments and intense lobbying rather than immediate involvement in the planning process came to characterise the development of the Voordelta Plan.

The role of nature conservation interests became critical to the development of the plan's policies. In the preliminary stages the national policies that gave priority to nature conservation and natural development in the Voordelta were widely accepted by all interests, but during the decision-making process the PPO's suggested compromise was abandoned in favour of nature conservation. Conservation interests were concerned that their aims would be diluted or compromised as the policy developed, and through their superior political power persuaded the BOV to reject the original criteria. In December 1991 the Project Group published their decided amendments, in which more areas were given over to nature while recreational access was decreased considerably. The most significant amendment was the year-round closure of shoals and shallows with water depth less than 6 metres below MSL (Alphen, 1995). Clearly conservation

interests had been the most successful lobby, which might have been expected given their long history in this part of the Netherlands and their political successes including the modifications of the Eastern Scheldt dam. Tourism and recreational interests increasingly lobbied the LNV (as a member of the BOV) to insist the original proposals be implemented, but recreational interests felt that the directorate of outdoor recreation within the LNV was unable to get the recreational case accepted by the Provincial Director of LNV. Consequently recreational interests were less effective as a lobby than conservation interests in spite of their support at municipal level and economic influence.

Other issues raised during the consultation process also increased the political nature of the discussion over amendments for the draft plan. Information on recreational impacts, particularly disturbance to wildlife, was controversial. Conservationists invoked the precautionary principle and sought larger exclusion zones for recreation to minimise the risk of disturbance. The conservation lobby's tactics of insisting that their aims be given primacy (not just priority) carried high risks. Nature conservation might have made temporary gains at the expense of other interests but in the longer term it could have lost support. In a polarised situation, opposition would have become more organised and increasingly unsympathetic to nature development in the inter-tidal areas. By failing to build consensus for the implementation of nature policies, and consider the legitimate interests of recreation or the local economy in a positive way, there was the danger of public rejection with the consequent damage to the natural environment. Meanwhile, recreational interests challenged the basis of the conservationists' assumptions on disturbance of wildlife and reasserted their own management policies. Consequently the objectivity of research and its interpretation were constantly challenged, with assumptions being used to justify regulations rather than research. Such uncertainty led to the designation of an off-shore reserve being considerably delayed.

The BOV appeared to have been little influenced by lobbying from recreation and tourist interests, and increasingly sympathetic to nature conservation. At a parliamentary level conservation lobbyists enjoyed informal contact with government officials at different levels of administration, persuading them of the need for greater conservation in the Voordelta. The draft plan's aims and objectives remained

unchanged from the Preliminary Policy Plan of August 1991, but in detailed proposals greater restrictions were placed on recreational access, and in more limited proposals for recreational development. While it had originally been considered that the PPO achieved the goals of nature conservation, the subsequent changes were considered necessary because conservation objectives had not been met (Alphen, 1995). Sidaway and Voet (1993) conclude that the 'balancing of interests' resulted from political lobbying rather than a technical assessment of proposals. The draft Policy Plan was published in May 1992.

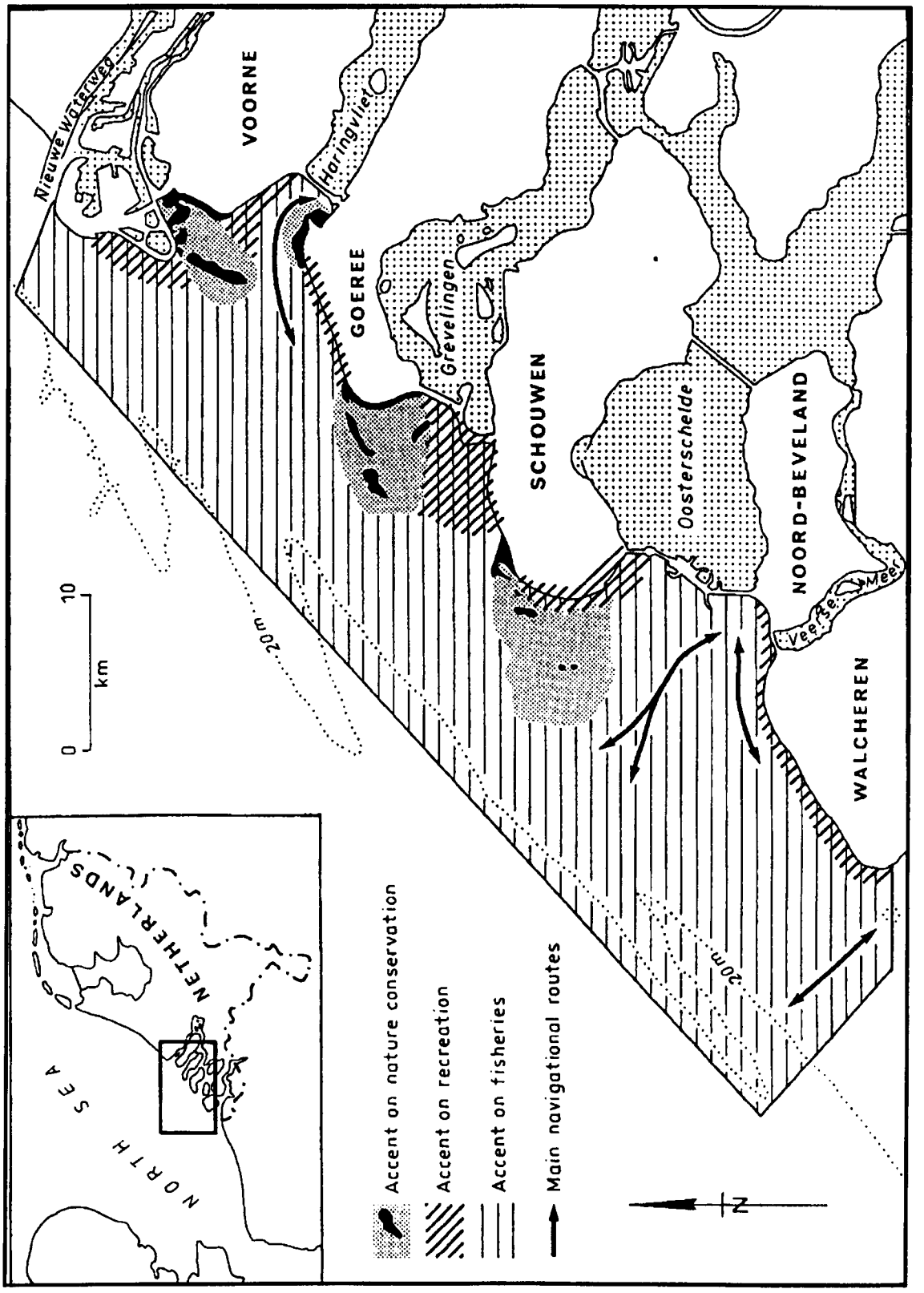
The final stage in the development of the plan was for each representative of the BOV to submit the plan for approval by their organisation, but it could not prevent earlier discussions flaring up again. Interest groups still dissatisfied saw this stage as their last opportunity to alter the plan. Fisheries and recreation interests' resistance grew with the larger and permanent restrictive areas of the draft plan, but being external to the decision-making framework meant that neither was able to lobby effectively for policy change against the internally placed environmental lobby. By November 1992 (six months after the Draft Plan was published), recreation lobbyists had persuaded the Ministry to issue a directive to the BOV to change the plan to be more in favour of recreation. The province of South Holland vetoed proposed changes in the zoning of the draft plan. Sport fishing interests were still lobbying against proposals to restrict access to the coast of Goere and seeking the co-operation of other recreation and tourist organisations. In addition new conflicts emerged, such as plans for land reclamation for the Port of Rotterdam and the nuisance of military training flights. These matters were difficult to resolve because all participants were tied to the original May 1992 plan.

It took twelve months before the final version of the plan could finally be approved by the BOV. During this time the municipal council of Westvoorne withdrew from the BOV and management planning process because it disagreed with proposals to close an accretionary beach to motor vehicle access. The willingness of fisheries and recreational interests to co-operate in the implementation of the plan also declined sharply on its launch. To counter such feelings a strategy had to be developed by the Steering Group to promote the Plan and restore the motivation of those interest groups.

In October 1993 the implementation of the plan was formalised by the signing of an administrative agreement by the BOV. A Steering Group, similar in composition to the former BOV, oversaw the plan's implementation. This group was composed of a majority of representatives from central and provincial government, maintaining the 'top-down' centralised approach to the project. The *Integraal Beleidsplan Voordelta* (V&W, 1993) consists of a description of the policy and measures regarding different activities, spatially translated into a zonation scheme (Figure 5.6). The policy-making process was based on a thorough knowledge of ecological values, activities and interactions to provide a reference situation, and the precautionary principle to protect areas of possible conflict. To achieve the sustainable development of the Voordelta, the vulnerable intertidal areas, accretionary beaches and adjacent shallow waters are thus protected from any possible interactions and adverse socio-economic activities. Recreation and fishing has been focused in less vulnerable (or ecologically degraded) areas, and recreational developments are favoured near easily accessible areas.

The zonation scheme allows a rapid, and easily interpreted, introduction to the management arrangements of the Voordelta and translates these into levels of environmental protection. The management information chart summarises the area based on statuses that control activities in the region, and the level of environmental protection they provide. By mapping the spatial coverage of the management arrangements, it shows where and how those planning or managing coastal zone use might combine their actions. This is a practical way to improve integration. The alternative would be to read the policy document, which would provide a good understanding of how plan policy relates to one particular activity, such as fisheries, rather than getting a clear picture of how they all interrelate. Benefits of this approach are that it is multi-disciplinary and presents relatively complex management information in an accessible and easily understood format (see Gubbay and Laffoley, 1996).

Figure 5.6 The Voordelta Plan Zonation Scheme.



Source: V&W, 1993.

5.4.3.3 Analysis of CZM Plan Development.

Planning and managing the coastal zone in a sustainable way is complex and the challenge it presents is on a scale and in a form that dwarfs previous experiences of legislation and policy making (Koekebakker and Peet, 1987). The Voordelta Plan demonstrates how the emphasis on coastal planning is slowly evolving from a technocratic approach to a more integrated approach in which conservation of natural resources is a major consideration alongside other economic uses. The plan has a non-legal status and participation in the preparation stages was voluntary. By adopting a voluntary approach to policy formulation, the BOV sought to ensure that the plan did not threaten those for whom it was intended by involving them in its creation. It was considered that implementation would be more successfully achieved if individual interests were given a voice during the negotiation (consultation) process to reconcile conflicting interest areas. The involvement of all levels of government, NGOs and the public emphasised the willingness of the authorities and interest groups to co-operate in the implementation of the plan, but it largely depended on their acceptance of the policy outcome, determined by participation during the policy preparation and decision-making processes (Alphen, 1995). Unfortunately, while the non-legal status was appropriate for getting the greatest diversity of sectoral interests to participate voluntarily in integrated planning, it was subverted by extensive lobbying. The Voordelta Plan's failure to involve all interests in the development of initial aims was criticised for its 'closed' decision-making process, and for being top-down and undemocratic (Alphen and Hoozemans, 1991).

The value of the Voordelta Plan as a means of learning is not limited to the extent to which it is implemented. Rather it provides the capacity for an improved understanding of the policy issues and how management planning is achieved when constrained by consensus. Examination of the plan's development, as an extension of the planning process into the nearshore zone, enables policy-makers to place problems of public choice in the marine environment into an explicit framework for decision making. Even if the plan changes public policy less than might be desirable (or necessary) from the

viewpoint of environmental protection, it may still contribute greatly to the improvement in the quality of policy understanding. Policy choice often involves choosing among competing objectives, and the problem is that policy-makers can often use their general facts about policy to provide cover for making implicit and unarticulated trade-offs (Weale, 1994). The Voordelta planners were prone to such trade-offs, persuaded throughout the decision-making process that the environmental interests had been poorly represented in the PPO, by effective lobbying (see Heer, 1993).

The Rijkswaterstaat initiated the Voordelta CZM Plan, guided its development and is supervising its implementation, but central government's role created several difficulties. The reluctance of national agencies to disengage and develop local trust by devolving power and responsibility for management, for example in the composition of the Steering Group, has been critical in the development and implementation of the plan. It would be usual to see increasingly local representation in management, but in the Voordelta the reverse seems to be true. Correspondingly, there has been a weak involvement of lower administrative bodies because they did not consider the Voordelta a planning issue, and if it was, they were not certain whether the aims of the policy plan were their aims as well (Alphen, 1995). Municipalities expected few benefits from the plan and their participation in the process, and it rapidly became clear that there would be restrictions on recreation and fisheries, the main sources of income. Hence, there was a risk that implementation by local authorities would fail.

In addition the LNV is responsible for recreation, for example, so the main conflicts in the Voordelta had to be dealt with in one department, which was very problematic (Alphen, *pers. comm.*). Environmental decisions were mostly taken through a participatory process, involving local communities and other stakeholders, but by lobbying rather than negotiation. Not all decisions were participatory, and those taken without due attention to process ran the very real risk of being rejected. While consultation added somewhat to the time required to take a decision, in most cases it added to the quality of the decision eventually taken and subsequent support. The consultative process also forced the authority making the proposals to identify, describe and assess implications for several different options. By excluding NGOs from the

formal process, relying on their lobbying abilities, the planning process became highly politicised and issues subsequently polarised. Differing user-groups were thus unwilling to compromise their vested interests and some were dissatisfied with the solutions developed by the BOV.

The organisation of power within the Voordelta planning process illustrated Rhodes' (1981) 'power dependency model' (see Chapter 3), in which it is inevitable that some departments are more important because they are involved in central tasks and will have more chance to exert influence. According to Stoker (1995) government has an interest in developing closed policy communities in order to achieve its own aims, but is dependent on the interests of various actors within government, the nature of policy and the institutional arrangements that are available to implement plans. Particular to the operation of this planning model for the Voordelta was the role of the RWS at all three levels of planning, especially their increasing influence at the higher levels of decision-making. Successful co-ordination within and between different levels of the RWS effectively excluded other ministries and local government from the policy review process, which allowed the RWS to follow its own agenda, in spite of vigorous lobbying from local government and interest groups. As Healey (1992) predicted, in spite of the concern to provide opportunities for local control, the planning structure subjected localities to a strongly centralist regime, in this instance organised around the RWS. Consequently rather than addressing the problem of co-ordination between levels and agencies that might deliver an integrated management plan, accountability failed to the extent that such co-ordination was not delivered and conflict has dogged the plan's latter implementation stage.

A more open decision-making would have been more suitable than the top-down model of the Voordelta, whereby officials produced proposals behind closed doors. Even if the policy outcomes had been similar, justice would have been seen to be done and there would have been a wider basis of public support for implementation. The 'top-down' central government-driven approach is typical of the attitude of the Dutch to environmental planning. In the Netherlands, where the political culture is to seek consensus, it is considered likely that the longer the programme of implementation and

policy review continued, the greater the balance between government and local leadership, irrespective of how a plan was initiated (IPCC, 1994).

Given that the Voordelta Plan has the backing of the three government ministries (RIKZ, LNV, VROM) the implementation of fishery, nature conservation and tourist management areas is guaranteed. An important feature of the plan is the management chart, which was also used during the policy development process. In multiple-use areas the use of such zoning policies allied with this type of chart could provide the key to solving many intractable conflicts. By summarising the management aims for a particular area, the claims by user-groups could be assessed and judged on their compatibility to the overall plan, rather than arguing the minutiae of policies.

5.5 Conclusion.

The integrated approach to coastal management is rooted in the extension of physical planning offshore, but there is no reason to believe that the political institutions of modern liberal democracy are capable of responding quickly and effectively to such social, environmental and economic conflicts as the coast presents. The approach lacks the force of law to implement policy effectively. As a device for solving collective problems the development of the plan is thus questionable. Weale (1994, p. 145) suggests "we should not be too optimistic about the performance of political institutions." In the Delta region, for example, where the primary planning authority is the RWS there appears to be little relationship between the planning of the Eastern Scheldt, the Voordelta, the Grevelingen and the Veerse Meer. The management problems of conservation, tourism, recreation and fisheries seem to be considered internally and in isolation by government departments, rather than by provinces able to plan holistically and strategically. There is a need for a strategic regional framework. A regional Tourism Strategy for the Delta region could address both the problems of the negative impacts and the considerable benefits to be gained from sustainable forms of tourism development.

Government policy is naturally sectoral, hence the need for integration at a provincial level. Provinces were identified as the 'lead agency' by the 1990 Policy that created POKs as a framework for provinces, water boards and the Rijkswaterstaat to discuss all coastal issues occurring in the province. From an initially weak position, the provinces will have to change to adopt CZM, which they are eager to do, but it will be a struggle to overcome the strength of water boards and the Rijkswaterstaat (Ruig, *pers. comm.*). The Voordelta Plan, for example, can be implemented by the Rijkswaterstaat because most of the area lies below LWM, but not in the dune areas and on the beach where the provinces are essential to secure implementation (Ruig, *pers. comm.*). The role of the province needs to be stronger to implement CZM and in coastal planning a complicated administrative system exists that is highly centralised. The province is the only organisation that can insist a municipality or water board follows a certain policy. If a province refuses a policy action the Rijkswaterstaat would have a problem competing in such an argument (Alphen, *pers. comm.*).

Toonen (1987) considered the hierarchical-centralistic image of the intergovernmental system grossly misleading. Further, that unity could not be imposed on the state from above, but must come from a plurality of forces thrashing out their differences within an agreed framework (Toonen, 1990). Nevertheless, while consensus planning extends to private actor and public participation, the system remains highly centralised and government influence extensive. Society is accepting of the government's role shaping land-use planning and expects a secure coastline to be provided.

The policy of 'dynamic preservation' has guaranteed the coastline's position offering opportunities for conservation and development of previously unavailable coastal areas, but it is also creating a vacuum of responsibility for planning the coast. Coastal zone management should fill this vacuum because it provides an appropriate mechanism for economic and natural interests to be managed together. In spite of the sophisticated land-use planning and coastal defence systems, there is no national policy for CZM in the Netherlands. If CZM is interpreted as a means of ensuring coastal environmental concerns are integrated into the planning process, it is only used as a selective planning mechanism. Integrated management is recognised as an important tool to ensure the environment has an economic value alongside development interests (Sande, *pers.*

comm.). With the experience of the Voordelta Plan and the Wadden Sea, and the fact that integral planning is currently favoured, the Rijkswaterstaat is thinking about a more comprehensive planning system for other areas of the coastal zone.

The historically strong position of the Rijkswaterstaat means that it should pick up responsibility for the coastal zone (Ruig, *pers. comm.*). The LNV is not impressed with the initiative and neither is VROM, which claims the responsibility for physical planning (Alphen, *pers. comm.*).

The planning of the Voordelta coastal zone can be considered typical of a centralised planning structure, with technocratic solutions and closed decision-making processes dominated by the internal coalition. Planning in the delta has been directed by the national government, but its terms of reference have changed to reflect current political priorities, from mass recreation to neutrality and now conservation. While CZM might strive for localism in its application, any management action in the coastal zone has first to be sanctioned by the coastal defence system that is controlled by the RWS, reinforcing the centralist planning approach.

In spite of the Dutch culture of consensus and integrated plan making, decision-making and planning power concerning the Voordelta has resided within an internal coalition itself dominated by the RWS. Consequently the planning system developed does not represent the most modern of planning approaches, which CZM would hope to ascribe (see Chapter 2). Many problems, both with the consultation and subsequent implementation, have been experienced due to the exclusion of all interest groups and local municipal councils from the decision-making process. Representation on the decision-making committees was limited to official government bodies, the key groups being dominated by national agencies. Information on the effects of recreation was not freely available, monitoring coverage was incomplete and the objectivity of the data was challenged (Sidaway, 1996). Decision making followed a limited consultation process, which politicised the plan's implementation. It is possible that conservation's dominance may be short lived if water sport and fisheries interests become better organised. If so, conflict over implementation appears to be inevitable.

The success of the Voordelta Plan has been to plan the management of the area by rationalising land-use planning in order to accommodate marine management issues. This is in contrast to the UK, where CZM is promoted as a voluntary extension of the land-use planning system into the marine environment with its subsequent adaptation. This is an approach that struggles to succeed because there are no statutory authorities that oversee marine management and land-use planning. In the Netherlands the central role of the RWS with its management responsibility for North Sea affairs, national coastal defences, and involvement in regional POKs with the land-use planning authorities, make it the only organisation capable of overseeing CZM. It is possible that if the UK had adopted a similar administrative approach, as Steers (1946) had suggested, the UK's coastal waters would have been similarly managed. As it is, CZM is approached differently at the local level in the UK (which is explored in the following chapter).

Chapter Six. The Wash Estuary Management Plan Case Study.

6.1 Introduction.

CZM represents an approach to environmental management in which nature conservation, economic and social activities are integrated into a single decision-making process. Crucially this approach also incorporates marine and land-based issues within the same framework (see Chapter 2). In such a way, the impact of land-based uses of the coastal zone are considered with respect to their impact on the marine environment, and *vice versa*. Within the context of planning and managing the UK's coastal zone this case study, which considers the development of a CZM plan for the Wash, is concerned with understanding how the theory and practice of CZM might continue to be progressed by local authorities. The absence of a national coastal zone planning policy, or an institution responsible for coastal issues overall (see Chapter 4), is a significant limitation in the concept of a coastal zone as a basis for integrated coastal planning in the UK. Any coastal zone will overlap existing political boundaries and public agency jurisdictions representing different economic sectors (for example fisheries, agriculture and coastal defence). The absence of a single administration with area-wide jurisdiction corresponding to the spatial management of the coastal zone might hamper the effectiveness of any multiple-organisation grouping charged with decision-making (see Chapter 3). The Wash Estuary Management Plan represents a recent example of CZM organisation that has been promoted by the government during the debate of the 1990s (see Chapter 4). That is, the plan has been co-ordinated by a coalition of local authorities and other interested bodies in a voluntary and consensus-led approach, which has considered land and marine use issues, conservation and economic development, and recreation and pollution issues in a holistic way. Following the outline of the plan's development, the case study's analysis and conclusion provide the basis for a comparison of the UK and Dutch approaches to CZM, and thus a critical analysis of the effectiveness of the UK approach (see Chapter 7).

The Wash is recognised for its environmental quality, sense of isolation and wilderness, and until now lack of development has limited habitat loss and pollution of the coastal waters. The Wash's coastal zone therefore supports nationally important shellfisheries and internationally important waterfowl populations. Increasing use of the coastal zone

through recreation, tourism, agriculture and industry is compounding the burden on resources and threatens conservation interests and sustainable development. Modern farming and fishing efforts, for example, concentrate greater stress on the available resources with deleterious effects including pollution of water courses and depletion of stocks. Economic activities that include port activity and shipping, light industrial development and a growth in tourism, are promoted by the local authorities to support a non-industrial and relatively weak regional economy. Such developments inhibit the potential for sustainable coastal environment through irreversibly altering the natural character and productivity of the estuary upon which local industries and communities depend. Local authorities must consider the implications of economic activity on the coastal environment resources in a sustainable way and by adopting the 'precautionary principle', which would not only protect the nature conservation interest of the Wash, but also the human uses of the environment (see Chapter 3). An integrated planning approach such as the government recommended (see Chapter 4) would provide a solution to the current and potential management problems around the Wash. By developing and applying a framework of strategic goals to the Wash that adopt the principles of CZM, the sustainable use and development of coastal zone resources might be safeguarded for future generations.

Many of the UK's estuaries have been placed under increasing development pressures and their value as coastal zone resources reduced. Although this is happening at a lower rate in the Wash, the area still faces many pressures. The government is encouraging local interests to collaborate in managing such coastal zone areas, and the development of a CZM plan for the Wash therefore makes a suitable case study to assess the potential for integration of coastal zone planning organised through a local 'enabling' authority. The plan is cited in the DoE's (1996) best practice guide for the diversity of organisations included within the planning stages, the defining of the plan area and use of subgroups to determine policy outcomes. The case study describes how local authorities and prominent NGOs have been involved in planning local coastal zone issues in the Wash. By examining the institutional arrangements between local authorities and other coastal interests, the case study identifies how the organisational structures, promoted by central government advice, influenced the plan's processes of development and implementation. Finally, the case study identifies the outcomes of the

planning process and evaluates the overall successes and problems of the planning approach adopted in the Wash. The case study thus objectifies and elucidates the significance of organisational elements of plan development to identify how CZM might be achieved by extending the planning system into the marine environment in accordance with government's desire for non-statutory integrated coastal zone planning without radical alteration to the current system.

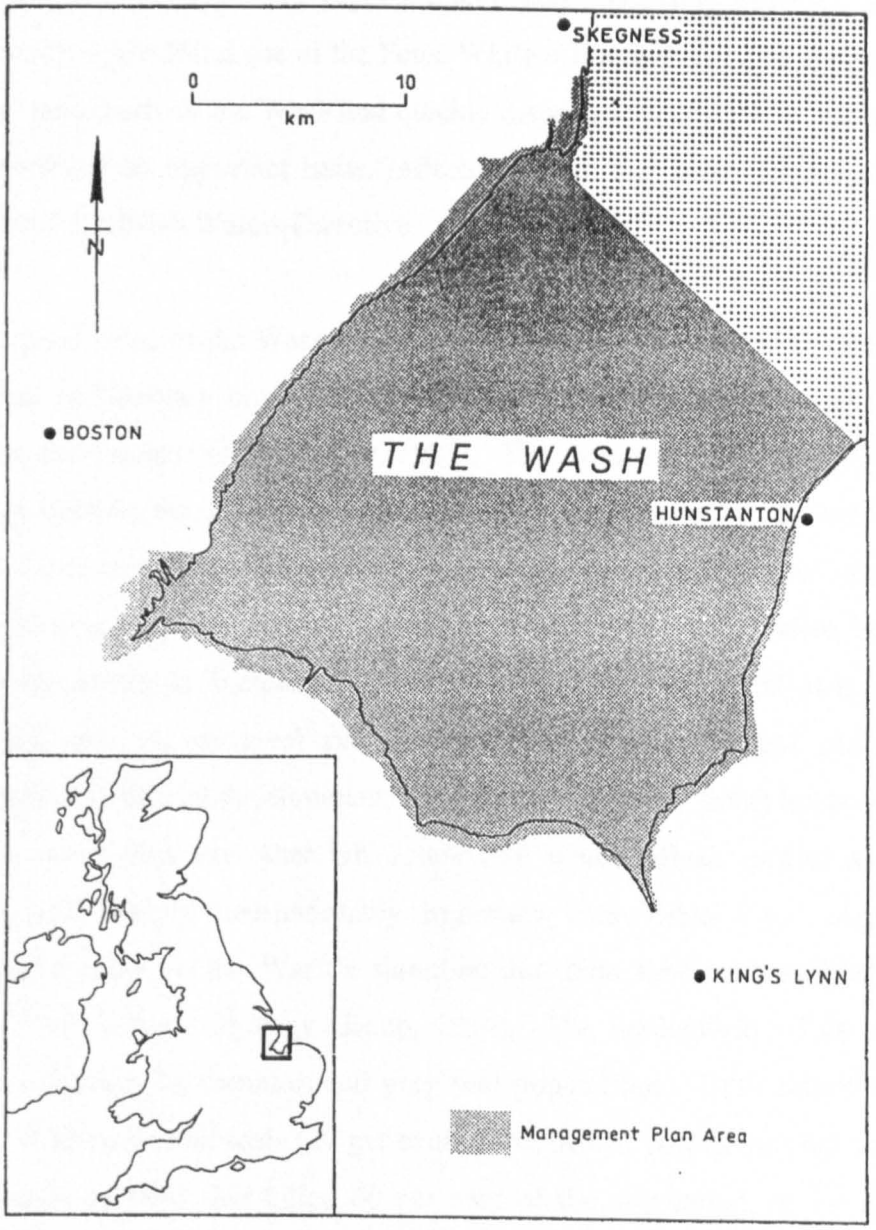
6.2 The Wash Estuary.

The Wash is characterised by its bleak, windswept and remote nature. There are few points of public access to the intertidal marshes although large swathes can be seen from the sea bank. There is an almost total lack of human settlement and only the wildfowlers' huts on Wootton and Wolferton Marshes and the military activity on Holbeach and Wrangle Marshes indicate a significant human presence in this area. The engineered structures of the sea banks offer the largest area of grassland near the coast in the UK, while the shifting channels and their marker buoys offshore also form important landscape elements along the main channels to King's Lynn, Wisbech, Sutton Bridge and Boston. Extensive areas of dune systems border the sea on either side of the mouth of the Wash, and north of Gibraltar Point lies the most extensive area of dunes that is a proposed SAC.

6.2.1 Environmental Aspects of the Wash Estuary's Coastal Zone.

The Wash is the largest embayed estuary in Britain with 107 kilometres of coastline and covering approximately 63,300 hectares (IECS, 1992). The geomorphological environment varies from sheltered areas in the extreme west, to the wave-exposed open coast of north Norfolk (Figure 6.1). Much of the open coast of north Norfolk is composed of mobile sands, with outcrops of chalk bedrock at Sherringham and West Runton that are of particular conservation importance because coastal exposures of chalk are rare on the East Anglian coast and in Europe. The morphology of the Wash consists of depositional forms expected of any estuary (see Carter, 1989), with extensive

Figure 6.1 The Wash Estuary.



areas of intertidal sand banks (approximately 38 per cent of the total area) and 55 per cent of the area shallow water (Wash Estuary Strategy Group, 1994). While tidal processes dominate the sedimentary environment, fluvial actions are significant in areas adjacent to tributaries and in determining water quality in the estuary. The four main rivers discharging into the Wash (the Witham, Welland, Nene and Ouse) have a catchment of 15,650 km^2, approximately 12 per cent of England. The rivers receive substantial inputs of sewage and trade effluent into their tidal and non-tidal stretches, much of which is derived from vegetable and food processing factories, reflecting the predominantly agricultural use of the Fens. While effluent discharges are readily diluted within the main body of the Wash and quickly dispersed, water quality and pollution for shell fisheries is an important issue, reflected in the poor classification of the waters under the EU Shellfish Waters Directive.

The ecological value of the Wash is based on the inter-relationship between the fluvial, marine and sedimentary environments that provides a range of habitats and highly productive ecosystems (see McLusky, 1989). The environmental value of the Wash is significant, because the 4,228 hectares of saltmarsh represent approximately 10 per cent of the national resource, while the 25,540 hectares of inter-tidal flats are the second largest total area of flats in Britain (Davidson, *et al.*, 1991). The relative importance of these environments is increasing because saltmarshes and tidal flats are rapidly disappearing due to sea level rise, estuary barrage schemes and reclamation for agriculture and industrial development. During the winter the Wash holds over 300,000 waterfowl, more than any other UK estuary, of which fifteen species are nationally important and thirteen internationally important (see Table 6.1). Approximately 100,000 gulls roost on the Wash's shoreline and nine species of seabird also breed onshore (Wash Estuary Strategy Group, 1994). The productivity of the area is also highlighted through its common and grey seal populations. Until recently, the Wash supported 7,500 common seals (27 per cent of the British population) but following the virus outbreak in 1988 that killed 60 per cent of the population, in 1991 there were 1,500 individuals (English Nature, 1994).

Table 6.1 Waterfowl in the Wash.

SPECIES	WINTER MEAN PEAK	IMPORTANCE
Bewicks Swan	84	*
Pink-footed goose	10510	**
Brent Goose	21808	**
Shelduck	18287	**
Wigeon	2371	*
Gadwall	74	*
Pintail	4697	**
Goldeneye	181	*
Red-breasted Merganser	101	*
Oystercatcher	36003	**
Avocet	26	*
Ringed plover	818	**
Golden plover	2528	*
Grey plover	7844	**
Knot	105134	**
Sanderling	800	**p
Dunlin	49783	**
Black-tailed godwit	656	**p
Bar-tailed godwit	11871	**
Curlew	3549	**
Spotted redshank	-	*p
Redshank	4740	**
Greenshank	-	*p
Turnstone	1249	**

**	Internationally important numbers wintering
*	Nationally important numbers wintering
**p	Internationally important numbers on passage
*p	Nationally important numbers on passage

Source: Wash Estuary Strategy Group, 1995.

The wildlife conservation value of the Wash is recognised internationally as a Ramsar site, a Special Protection Area under the EC Bird Directive, and proposed marine and terrestrial SAC under the EU Habitats Directive. Nationally the Wash is also recognised as an Area of Outstanding Natural Beauty, through SSSI designations and several areas managed as National Nature Reserves and local Wildlife Trust Reserves.

6.2.2 Major Human Uses of the Wash Estuary's Coastal Zone.

Even relatively undeveloped coastal zone such as the Wash supports a number of activities, any of which could have a negative impact on the continuing importance of the area's wildlife and environmental quality. Exploitation, primarily for agriculture and fisheries, has continued since Saxon times but the control of agricultural, fisheries (since the late 18th Century), urban and industrial development have only recently been introduced through planning legislation and nature conservation designations. Significantly, the largest user-groups of the coastal zone, i.e. recreation and agriculture, are outside the planning system. As economic activities, each seeks to maximise profits, achieved by intensifying use of their environment. Previously economic sectors tended to operate in isolation, resulting in the short-term and piecemeal view of the estuary, rather than as a shared resource and single physical and biological system. The potential in the Wash, therefore, is for a series of increasingly competitive conflicts between economic sectors that will impinge on the conservation value of the coastal zone without an integrating management plan.

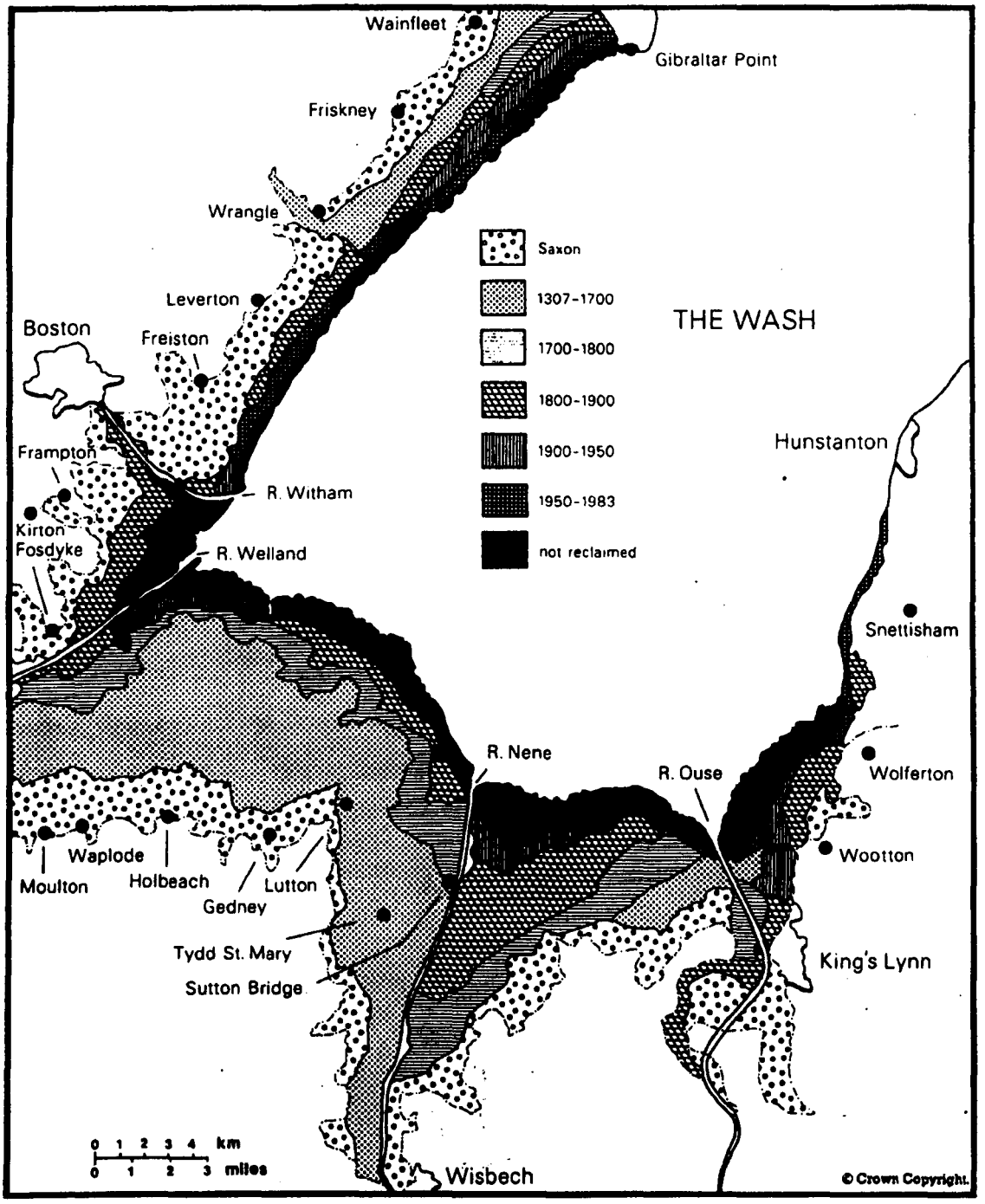
Shellfishing has traditionally represented an important part of the local economy. The Wash is a nationally important region for pink and brown shrimp, cockles and mussels, and an important nursery for commercial fin fish species notably plaice, sole, cod and whiting. Estimates are that the Wash provides the North Sea with two per cent of plaice and one per cent of sole in an average year (Riley, 1987). The industry accounts for approximately 60 per cent of the mussel landings in England and Wales, 30 per cent of the cockle and brown shrimp, and 100 per cent of the pink shrimp landings (Wash Estuary Strategy Group, 1994). The industry has seen significant investment. In 1992, the fishing industry, and supporting ancillary industries, employed approximately 2,000

people (Schofield, *et al.*, 1992). Many of the fishing techniques being introduced, including hydraulic suction dredging gear, are improving the efficiency in the shell fishing industry but the current capacity of the fishing fleet is thought to exceed shellfish stocks. Under existing licensing arrangements no new licences are granted by the EJSFC, limiting fishing to current levels to try to ensure sustainability of the shellfishery. Concern has been expressed that the modern intensive shellfishing methods are conflicting with wildlife conservation interests through damaging the benthic community and extracting a catch greater than can be replenished naturally (Schofield, *et al.*, 1992).

The Wash is fronted by saltmarshes and mudflats for over 75 per cent of its length. Having evolved in response to sedimentary process and wave action, saltmarshes are a permeable, partly mobile, natural barrier to the sea. The stability of the coastline is a function of sediment processes and relative sea level change for the specified temporal and spatial scales over which each is considered (see, for example, Shennan, 1992; Pethick and Leggett, 1993; Carter, 1989). Human perceptions of the coastline's stability are complicated to assess and based on very short-term observations, but the human ability to modify the coastline is such that perceptions of the coast are the most significant factor in determining any management response to coastal land use change. Future changes in the environment of the Wash will be dependent on the management response to social, political, economic and environmental conservation arguments as well as seemingly more 'natural' changes. During the late 1970s Lincolnshire County Council, for example, considered the continued seaward shifting of the coastline through land reclamation an acceptable strategy. The perceived benefits of improved sea defences and additional agricultural land were to be gained at the expense of the natural resource saltmarsh represents (Lincolnshire County Council, 1982).

Land reclamation, practised around the Wash since at least Roman times, has seen approximately 47,000 hectares reclaimed since Saxon times (Figure 6.2). In more modern times successive claims have involved constructing earth banks along the outer parts of the saltmarsh, draining the land behind the embankments for agricultural use. Some areas surrounding the Wash behind the earliest sea walls are several metres below current sea level due to the reclaimed land's elevation relative to sea level being lowered

Figure 6.2 Land Reclamation on the Wash.



Source: Davidson, *et al.*, 1991, p. 360.

through drainage and sediment compaction (Davidson, *et al.*, 1991). This has potentially serious implications for the effects of future sea level rise, flood protection, coast defence and nature conservation (see Evans and Collins, 1987; Carter, 1989). Sequential land-claim around the Wash continued well into the 20th Century until Lincolnshire County Council placed a moratorium on further agricultural land-claim in the early 1970s. This, and the reduction in demand for agricultural land, have meant there have been no new land-claims since 1979. Nevertheless large areas of the Fens lie below mean sea level as a result of reclamation and the threat of inundation by the sea remains ever-present.

Agriculture underpins the local economy around the Wash. To the landward side of sea embankments the agricultural land is some of the most productive in the UK, (classified Grade I, II or IIIa), and represents the highest single concentration of such quality land in the country (Wash Estuary Strategy Group, 1994). Arable cropping accounts for approximately 90 per cent of the agricultural land-use, and winter wheat for 90 per cent of the cereal area. Between the River Nene and Gibraltar Point horticultural crops are an important commodity and there has been specialisation of grading and packing facilities that market directly to major multiple retailers. Conversely, livestock farming is a minor practice, with the numbers of cattle on the saltmarshes declining because financial pressures have forced farmers and growers to expand their arable holdings, reduce labour costs and add value to their primary production. Consequently, coastal grazing marshes have developed considerable wildlife conservation interest, notably their ditch flora and fauna (Davidson, *et al.*, 1991).

Previously agriculture provided an important resource for wildlife habitats, but continued intensification of agricultural practices, investment in infrastructure and economic uncertainty will increasingly draw agriculture and wildlife conservation into conflict. Grazing marshes have been lost to a variety of purposes (including urbanisation, rubbish tipping and soil disposal) but the majority have been destroyed by agricultural intensification. The pace of agricultural change will continue to accelerate following the reformed EU Common Agricultural Policy, and high value root crops and field vegetables will maintain their pre-eminent position and importance to farm incomes and profitable agriculture (Wash Estuary Strategy Group, 1994). The farming

community will be required to show increasing willingness to adopt schemes that can create, enhance and maintain landscapes and habitats if the Wash is to remain a nationally important coastal zone for wildlife. Such schemes are unlikely to be a priority where there is economic uncertainty, and protection of the environment will only be considered in relation to its viability with respect to 'agribusiness' economics.

Recreation in the coastal zone around the Wash occurs on a variety of scales. Characteristic of the coastal zone is that an individual area can simultaneously support a number of different coastal activities including nature conservation, recreation and other economic activities (see Chapter 2). In Norfolk tourism is highly developed, with large commercial caravan sites at Snettisham and Heacham and over one million day-visitors per year at Hunstanton (Wash Estuary Strategy Group, 1994). In contrast, many people visit the area to enjoy its wildlife interests, quiet and solitude. Access for low-impact activities is provided by an extensive network of footpaths that follow the coast. Local people traditionally enjoy the benefit of access to the marshes, which makes public rights of way a highly political (and on-going) issue. Activities predominantly include walking (including dog walking) bird watching, bait digging and wildfowling. Wildfowling essentially involves the interception of ducks and geese flying to and from their roosting and feeding grounds on the saltmarshes and mudflats. Wildfowling is regulated through eight Wildfowling Clubs and Associations that hold sporting leases and licences, and manage their members' activities through restricting membership, permits, bag limits and establishing wildfowl refuges. Disturbance to wildfowl is also caused by a wide variety of other recreational activities.

Whilst disturbance is often unintentional, the Wash is gradually becoming more popular for an increasing variety of water based activities, particularly jet-skiing and yachting. A particular concern for waterfowl conservationists is the use of Jet-Skis in the creeks of the saltmarshes resulting in the disturbance of roosting areas. Similarly, the competition for space in open water among yachts, Jet-Skis and windsurfers is likely to increase conflict with other coastal interests. Such conflicts include increasing disturbance to birds and seals, more frequent and potentially serious pollution incidents, and the exclusion of other recreational uses (Carter, 1989). The impact of water-based recreation means that should disturbance and pressure of use become intolerable, the use

of zoning would be a desirable management approach (see for example, Gubbay and Laffoley, 1996). Indeed, the level of water based recreation in the Norfolk side of the coastal zone has already necessitated the borough council to consider introducing zoning as a means to reduce conflicts (Wash Estuary Strategy Group, 1994).

The national (and international) economy of the Wash is supported by maritime trade and port activity. Currently the five seaports of Boston, Fosdyke, King's Lynn, Sutton Bridge and Wisbech handle approximately four million tonnes of cargo per year through 7000 ship movements (Cpt. Franklin, *pers. comm.*). With coastal vessels getting larger, navigable channels are closely monitored, maintained, and occasionally relocated in accordance with the jurisdictional powers exercised by the port authorities. Port activity is essentially unregulated with respect to other coastal zone uses because the port authority is the competent authority overseeing actions. The environmental impact of engineering works (disturbance, dredge spoil smothering, and re-release of pollutants) is considered potentially deleterious to the surrounding ecology, but the port and harbour authorities have statutory responsibilities for a range of marine-related activities including an obligation to maintain and/or improve the ecology of the area. Consequently, the port authorities' involvement in any CZM plan would be required to ensure a focus for activities straddling the land/sea interface such as recreational boating, and the consideration of the environmental impacts of shipping in the marine environment.

Finally, the Wash has been used by the military since the 1890s, and currently supports two Royal Air Force weapons ranges at Holbeach and Wainsfleet. The ranges are of national and international importance to the Ministry of Defence (MoD) and their use is considered a matter of priority. The ranges together cover approximately 25 square miles of saltmarsh and tidal flats and thus occupy a significant area in which public access rights are controlled for safety, thereby limiting intrusive uses. The MoD is aware of the national and international importance of the Wash and is committed to protecting wherever possible the nature conservation assets of the area, under an agreement with English Nature. Use of the weapons ranges does have detrimental effects on the natural environment and restricts the public's rights to access due to safety considerations. As part of the management of the ranges the RAF operates a

Conservation Committee for the Holbeach range, comprised of local, national and statutory bodies, to discuss matters of ecological and operational concern.

6.3 Coastal Management of the Wash Coastal Zone.

6.3.1 Introduction.

The first formal coastal management measure in the Wash was introduced in the 1870s with the regulation of the shellfisheries. The Board of Trade granted regulation orders to the Boston Corporation and Corporation of King's Lynn, in 1870 and 1872 respectively, to protect depleted mussel and oyster stocks (EJSFC, 1994). Following these orders, the 1888 Sea Fisheries Regulation Act gave the Board of Trade the power to create Sea Fisheries Districts upon application from a county or borough council. Norfolk County Council applied for such a district in 1893, and in 1894 a Sea Fisheries Committee was inaugurated.

Land-use planning has evolved since the 1930s and contributed to the management of the landward side of the coastal zone (see Chapter 4). The Wash has also been recognised for its conservation value by statutory authorities since 1972, when the Nature Conservancy Council first notified the area as a SSSI. In addition, as previously described, the Wash has been a designated Ramsar site since 1988, in spite of objections from MAFF, which wished to see more saltmarsh enclosed for coastal defence and agriculture. Other coastal zone regulations have been developed for particular sectors of use in the Wash. Recreation, for example, was first regulated during the 1950s when wildfowling clubs and associations were formed to regulate what had until then been uncontrolled shooting of waterfowl (Schofield, *et al.*, 1992). Two voluntary nature conservation organisations became involved in nature conservation in the Wash during the 1970s. In 1972 the RSPB purchased an area of shingle beach and later negotiated the lease of 1200 hectares of intertidal mud and sand (Schofield, *et al.*, 1992). The RSPB then acquired a further 365 hectares of saltmarsh, in 1984 and 1986, which is managed as a local nature reserve. The Lincolnshire and South Humberside Trust for

Nature Conservation leased (and in 1976 purchased) approximately 260 hectares of saltmarsh also managed as a local nature reserve. Nature conservation is a primary focus in the Wash, but conflicts endure with the pollution of inshore waters from agriculture and port operations, loss of habitat from coastal defence projects, and disturbance and development pressures from recreation and tourism.

In 1985 the regional Nature Conservancy Council appointed a site manager for a small National Nature Reserve (NNR) in the Wash. In spite of the NNR's comparatively small size of 48 hectares, the area was large enough to accommodate a multiplicity of traditional interests including agriculture, fisheries, wildfowling and recreation. The NCC felt that if they were to develop a management plan, nature conservation needed to be seen as the primary objective in order that all major users might recognise, and assist in sustaining, the international importance of the Wash (Ian Paterson, *pers. comm.*). Rather than simply plan for the NNR, however, the NCC aimed to develop an area-wide management plan for the whole of the Wash coastal zone focused on managing coastal activities around conservation needs, albeit limited in its resources and scale. A series of papers was proposed to promote the concept of conservation management, and three papers were initiated between the NCC and 'interested parties' to consider the general conservation principles, wildfowling and saltmarsh grazing in the Wash. The three papers were expected to be the first in a series of eight discussion documents at the primary stage in the eventual production of an agreed overall management policy.

A traditional technique to ensure the adequate safeguarding of waterfowl is to establish reserves in which shooting and other disturbances are limited. Beyond the limits of the NNR, the proposed management plan identified five areas around the Wash that would make suitable sanctuaries. These five areas encompassed approximately 30 per cent of the saltmarsh and intertidal areas, and would have severely restricted the access to the Wash of other coastal zone users. Consequently, when the three consultation papers were published in 1989, they proved highly controversial and provoked heated public debate involving local MPs, councillors and wildfowling organisations (Ian Paterson, *pers. comm.*). Objections were based around issues of access, restrictions in wildfowling and the suspicion of the NCC's intentions for areas designated for conservation in the Wash.

Despite the then radical and 'modern' planning approach of discussion documents and consultation with interested parties, the project failed to secure consensus and support with the wider Wash community. The management policies proposed by the NCC were considered highly prescriptive by consultees and interpreted as an attempt to define what could and could not be done in the Wash. Such implied restrictions on freedom were strongly resisted by the farming and fishing communities, waterfowlers and the general public alike. While comments from the public meetings were noted, insufficient resources and other priorities in the East Midlands Region of the NCC resulted in the contentious project's suspension.

In 1992 English Nature launched the 'Estuaries Initiative' with the aim of working with local authorities and other bodies to undertake a programme for developing estuary management plans. The main objective of English Nature's project has been achieving a broad understanding of estuaries' commercial and conservation values and the need for sustainable management. By 2000, English Nature also aimed to have acceptance of management plans for 50 per cent by number and 80 per cent by area of England's estuaries (English Nature, 1992). The management plans are non-statutory and developed in partnership with local authorities, other public bodies, the Crown Estate Commissioners, estuary users and the voluntary conservation sector. English Nature's contribution to the development process includes setting out the current legal and management framework, identifying issues that need to be addressed, establishing the objectives of the various estuary users, and identifying potential conflicts of interest.

The NCC had also re-started the Wash management project in 1992 with the appointment of a Wash Project Officer charged with re-drafting the original papers and generating enthusiasm among local authorities and other organisations to develop a Wash Management Plan. With the reorganisation of the NCC to form English Nature, the project's aims were revised in accordance with the national aims and objectives of English Nature's corporate initiative "Campaign for a Living Coast". The government had already indicated that where a coastal zone or estuary management plan was established, it could be used as the basis for managing newly designated SACs under the EU Habitats Directive. The Wash Project Officer's task was therefore to convince local

authorities to take genuine ownership and leadership of the Wash, supported by English Nature rather than driven by them, and develop a management plan that brought together all leading agencies to agree 'broad brush' strategic goals of a management strategy and to plan what action is necessary to achieve them (Ian Paterson, *pers. comm.*).

6.3.2 The "Wash Estuary Management Plan".

6.3.2.1 The Objectives of the Management Plan.

As part of the "Estuaries Initiative", English Nature invited Lincolnshire and Norfolk County Councils to participate in the organising and developing of a coastal management plan. Government discussion had already identified local authorities as the natural lead agencies in coastal planning and issued guidance that encouraged local authorities to collaborate in managing stretches of coast especially where interests cross local authority boundaries (see Chapter 4). The invitation was readily accepted by both councils who were keen to follow the government's directive to lead the development of a voluntary CZM plan. Aware of the suspicion and hostility generated by the NCC's earlier management project, English Nature aimed to produce a plan that would not alienate conservation policies with particular coastal interests. Many farmers working land reclaimed from saltmarshes believe that once 'hard lines' are established on a map they will be incorporated into legally binding local plans (Simon Fisher, *pers. comm.*). Any land seaward of such a boundary would subsequently be blighted or result in English Nature dictating how such areas are farmed for conservation. Consequently, such demarcations are strongly resisted. English Nature intended that the new management plan would not contain any specifically mapped areas by boundary that would imply a definite management policy or management practice. Instead, the plan's management objectives and recommended actions are to be pursued within the already statutorily designated areas in the Wash, but also in those wider adjoining areas in relation to specific issues as they apply. The 'best practice guide' (DoE, 1996) praised the Wash Estuary Management Plan's choice of the existing SSSI as the suitable

boundary because it was well established and incorporated the geographic area covering all key issues. The objective was thus to create a plan that, through consensual agreement, would promote conservation among all groups instead of alienating conservation interests among groups.

The overall framework for the management plan is provided by general strategic goals published by the Wash Estuary Management Strategy Group (1994) in the "Strategy For Sustainable Management". This 'broad brush' strategy for sustainable management of the Wash was produced following consultation between the Officers' Group and other interests in the Wash during 1994. The strategic goals both recognise the Wash as an international nature conservation resource and aim to maintain and enhance its value through the 'precautionary approach'. The strategic goals therefore aim to enable economic activities that need to operate in the area, including flood protection, and to do so in harmony with other uses. In addition to distinctive landscapes, archaeological and historic features being safeguarded, recreational activities may be allowed in such a way that they do not conflict with the natural beauty of the area. Finally, all parties active in the Wash were encouraged to co-operate in the future in using the various powers and rights under which they operate to further these goals. As such the strategic goals represent an initial policy framework establishing some broad principles upon which the management plan could build.

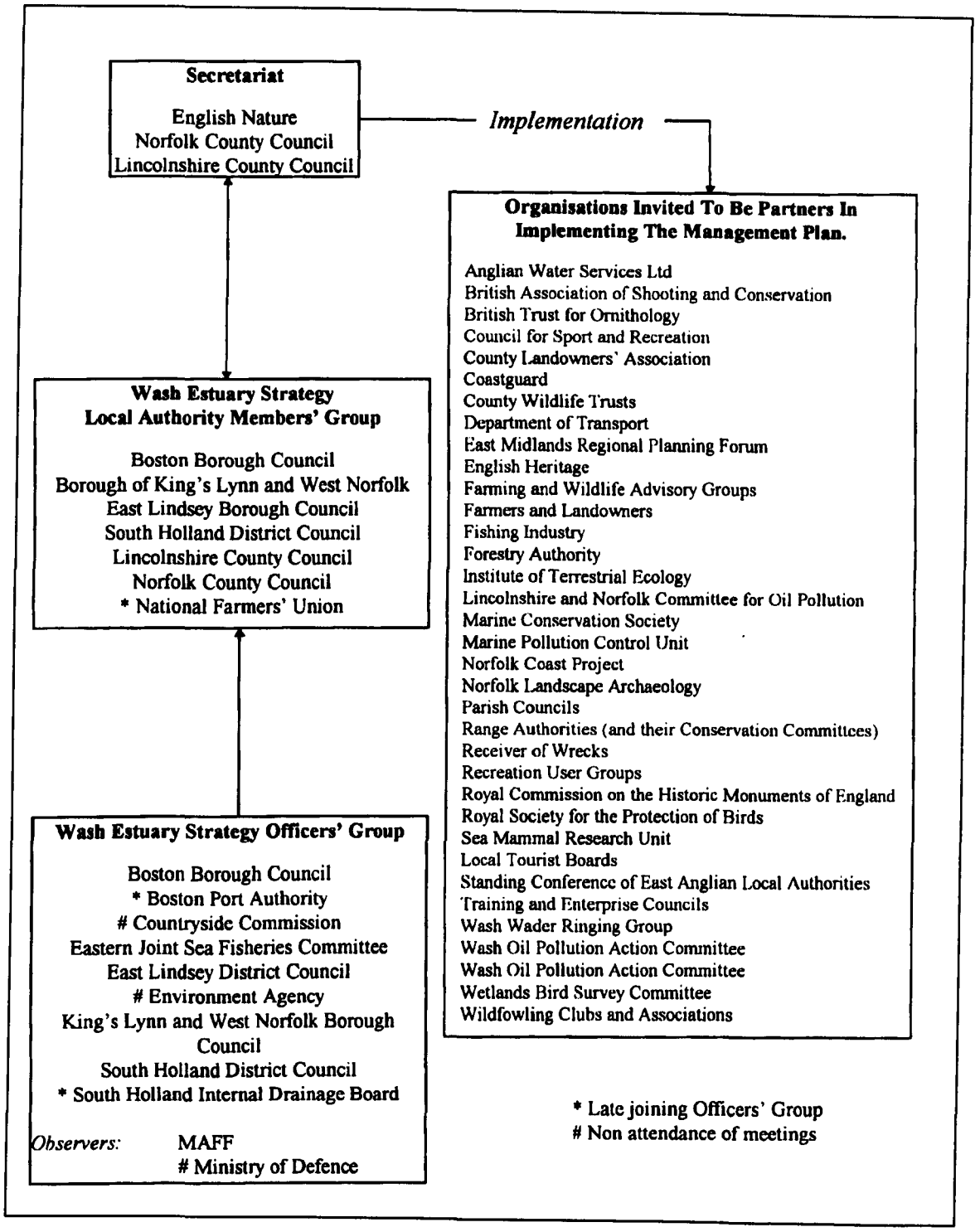
6.3.2.2 The Administrative Organisation of the Management Plan.

The county councils and English Nature acted as the secretariat to the Officers' Group. The Officers' Group was charged with the development of the management plan for the approval of the Local Authority Members' Group. Their role was essentially a technical one, developing a workable plan for the use of the estuary based on the principle of sustainability (Wash Estuary Management Strategy Group, 1996). The Members' Group, composed of politically elected representatives from each local authority, was required to approve all management plan policies because of the potential financial implications and other resources necessary to support the supervision of the plan's implementation. Local authority approval was also essential for the plan because it is

based on voluntary participation of all organisations, and the policies are non-statutory. With the professional and political composition of the Officers' and Members' Groups respectively, their different expertise will direct management policies towards diverging goals and through differing instruments. Boehmer-Christiansen (1994) considered professional politics to be a useful form of expertise, although not as a neutral arbiter and co-ordinator, but a self-interested filter. In addition to local political accountability through the Members' Group, the management plan was made available for public consultation and a number of local organisations invited to be partners in implementing the management plan (Figure 6.3).

In creating the Officers' Group, the secretariat identified a number of statutory bodies with significant management roles in the Wash that might support the strategic goals and be willing to participate formally in the plan. Invitation on to the Officers' Group was highly political and deliberately limited to those with statutory responsibilities. This reduced the prospect that with more organisations on the working group, the less would be done (Peter Raspin, *pers. comm.*). The central grouping of representatives from 'senior' organisations that formed the 'strategic apex' operated principally within the political arena and was based on professional meritocracy, which simply ensured the coalition performed its mission effectively rather than incorporating genuinely vested interests (see Chapter 3). In its initial form the Officers' Group excluded a great deal of knowledge that Boehmer-Christiansen (1994) suggested could be due to certain organisations existing beyond the considered remit of the group either being able to challenge existing attitudes and commitments, or. As such, the composition of individual interests at the centre dictated the focus of the organisation (see Chapter 3). This has a crucial impact on the structure of any plan in terms of those management objectives selected and prioritised, because with statutory responsibilities providing a minimal management framework they could determine the entire planning coalition's approach towards deciding policy outcomes for the Wash, irrespective of local interests. As a result, the development of the management plan was as much influenced by the evolution of both the Officers' Group and Members' Group as the incorporation of local wishes expressed through the consultation procedure.

Figure 6.3 Partners Invited to Implement the Wash Estuary Management Plan.



Source: Wash Estuary Management Plan, 1996, p. 5

The original composition of the Officers' Group developed by the secretariat failed to identify fully all those with statutory responsibility in the coastal zone of the Wash. For example, it was considered that port and harbour activities would not constitute a management issue because navigation functions beyond the statutory planning system were statutorily regulated by the ports' authorities within the Wash. Hence it was thought there would be nothing in which ports' authorities could become actively involved (Ian Peterson, *pers. comm.*). The Wash is possibly unusual in that the whole offshore area is covered by port authority jurisdiction. Given their obligation to maintain and improve the ecology of their area, the exclusion of the Port Authorities from the group constituted a major oversight in the planning for nature conservation across the entire coastal zone by the secretariat.

The six Wash port authorities, represented by Boston Port Authority, were willing to contribute to the Wash Estuary Management Plan because they considered such a project would be devastating if planning decisions and management strategies were agreed to in their absence that were detrimental to their commercial operations (Cpt. Franklin, *pers. comm.*). Equally, the ports saw advantages in an involvement that allowed insight into other organisations' aims and ideals for the Wash, particularly among conservation interests that routinely objected to the operational processes and expansion plans. The port authorities' inclusion in the redrafting of the strategic goals and the management plan's development, gave the Officers' Group a considerably sharper focus on coastal *zone* planning issues rather than issues with a coastline location.

In the conception of the Officers' Group, the NRA (now the Environment Agency) was considered to be able to reflect all those functions pertaining to its responsibilities including coastal defence and water quality. Unfortunately the NRA was fully occupied with the development of its Shoreline Management Plan[8] and in fact rarely participated in the Officers' Group meetings. Consequently, the Internal Drainage Boards (IDBs) wanted to participate in the process (as an organisation with statutory responsibilities)

[8] The Shoreline Management Plan is an independent plan concerned with flood protection and coastal defence. It is supported by the Wash Estuary Management Plan and is considered the technical document dealing with coastal defence.

believing that, in their absence, flood defence and land drainage were inadequately represented. According to the secretariat, making both the port authorities and IDBs a formal part of the process provided the Officers' Group with valuable technical advice on issues that would otherwise would not be understood (Peter Raspin, *pers. comm.*). The inclusion of the IDBs, however, occurred very late in the development of the plan, only months before the launch of the plan in July 1996, and their contribution to shaping the plan's policies was minimal.

In addition to the exclusion of statutory authorities from the Officers' Group and non-participation of the NRA (and Countryside Commission), a significant factor in the development of the Officers' Group was the withdrawal of MAFF from the planning process. MAFF had originally represented agricultural interests on the Officers' Group, but their active participation in the plan's development became a significant problem because they could not appear beholden to anybody other than central government. The Ministry subsequently withdrew, providing technical assistance as an observer to the Officers' Group when required. Their withdrawal presented the secretariat with the problem of drafting the plan's agriculture policies because the original concept was that, being driven by hard economics, national government policy would be the major influence. Without MAFF, the Officers' Group lacked sufficient expertise to construct a paper that adequately considered the interface between agriculture, nature conservation and other coastal zone uses.

MAFF's withdrawal also frustrated the NFU, who were previously unaware (or possibly not informed) of the strategic goals agreed between English Nature and the county councils that provided the framework for the management plan. Naturally, the NFU were concerned that agricultural interests should be adequately represented and defended in any management plan for the Wash. Following MAFF's withdrawal, the secretariat considered the NFU the most likely representative group to comment on any agriculture paper produced and they were therefore invited to contribute to the plan. If the agricultural community considered English Nature to have written the agricultural chapter, for example, it would have been highly controversial and inflammatory to farmers suspicious of conservation ambitions for the Wash (Simon Fisher, *pers. comm.*). The NFU therefore readily accepted the invitation, recognising the opportunity to

represent their interests directly in the management plan and establish their influence more firmly, with English Nature and other conservation interests (Simon Fisher, *pers. comm.*).

The secretariat did not consider it appropriate that the NFU be formally invited onto the Officer's Group because as a political organisation they were not statutorily involved in planning policies for land or sea. The Members' Group, however, considered it politically expedient to include the NFU because it was considered that with landowners and occupiers directly contributing to the plan, it was more likely that final policies would be implemented. The NFU's willingness to participate was assisted by the plan's voluntary and non-statutory status, because had the plan been statutory their approach would have been more defensive against possible constraints on development and control of agricultural practices (Simon Fisher, *pers. comm.*). Given the farming community's potential to obstruct implementation of policies, the secretariat also considered it very much better to have the NFU participating on the Members' Group than lobbying from outside (Ian Paterson, *pers. comm.*).

The government focused CZM at a regional level to encourage local user groups to become actively involved in local coastal planning issues. The arrangement of the Officers' Group decided by the secretariat, however, simply created a centralised strategic apex based on shared expertise and professionalism of land-use planners, to the exclusion of all other interest groups. No doubt the secretariat's intention in creating a professional internal coalition was to ensure power was held by those most suited to solving the problems of planning for the Wash (see Chapter 3). For example, much of the draft management plan was prepared by an organisation with the jurisdictional responsibility and expertise for that planning issue, and standardised for the management plan through the secretariat. Where the process of writing papers was 'handed over', the secretariat considered the process to have worked surprisingly well because nothing was produced that fundamentally contradicted what was trying to be achieved (Ian Paterson, *pers. comm.*). The positive nature of the development process saw local authorities "swept along by the tide" (Robert Bowe, pers. comm). All planning officers thought the planning process represented an opportunity to develop detailed and prescriptive coastal management measures through which each council

could achieve more than it would alone. Consequently, within the Officers Group, the plan represented an opportunity to establish the environmental situation around the Wash, focusing on who has responsibility for what and bringing together sectoral interests to ensure that they all pursue the aim of sustainable development within the context of CZM.

The centralising strategy was also applied to the Local Authority Members' Group, established to oversee the preparation of the plan and endorse its contents, which only reluctantly accepted the addition of the NFU. Consequently, many of those NGOs wanting representation on the Members' Forum were only given the opportunity to express their opinions through informal negotiation, and no formal recognition was given until the public consultation phase of plan development. This effectively excluded almost all local interest groups from the detailed planning of management policies. An exception was the creation of an Environment Sub-Group led by English Nature and comprising wildfowling club representatives, County Wildlife Trusts, and the RSPB that developed particular aspects of the management plan. The formation and operation of this subgroup received praise in the DoE's (1996) 'best practice guide', but without similar fora giving local interest representation on issues including coastal defence and recreation, it served only to politicise still further English Nature's ambitions for the conservation of the Wash among the land-owning and agricultural communities.

The composition of the Wash Estuary Strategy Group could therefore be summarised as a top-down organisation, highly centralised and co-operating in partnership through the process of techno-rationality, pluralist politics and co-operatist negotiation (see Chapter 3). Consequently, the development of the Wash Estuary Management Plan can be classified as an example of Healey's (1992) Hierarchy, Co-ordination and Broadly Based Interest Model, essentially town and country planning-oriented and influenced by local politics rather than coastal zone problems. The bias towards land-based development issues and conservation management had significant implications both for policy objectives during public consultation and implementation phases.

6.3.2.3 The Wash Estuary Management Plan's Structure.

In December 1994, the Wash Estuary Strategy Group published the draft "Wash Estuary Management Plan" for public consultation. The management plan is non-statutory and contains specific suggestions for action by all those statutory and voluntary bodies and individuals with significant interests in the management and use of the Wash. Nevertheless, there has always been an undercurrent of suspicion that the plan's ultimate form would be statutory, and individuals (particularly the farming community) remain reluctant to support the plan fully in its aims and objectives because in so doing they might restrict their current practices in the future (Simon Fischer, *pers. comm.*).

The plan encompasses many issues across the coastal zone, including marine conservation and fisheries, waterfowl conservation and recreation, and considers their potential management arrangements in terms of particular issues for the Wash (Table 6.2). Each section of the plan considers the background to the issue concerned and how it relates to other uses in the Wash, ensuring that the management of each issue has been considered 'in the round', and the most appropriate ways of promoting the original strategic goals identified. The plan is notable for its coverage of all coastal planning issues both above and below the low water mark, and how other issues are related to one another in a truly integrated CZM approach. The Ports and Navigation section, for example, considers fishery resources, saltmarsh conservation and the conflicts between dredging and flood protection works around the Wash, all with respect to the impact of port activity upon them.

The plan is structured through a series of goals supported by a series of general objectives and specific actions, and suggests the likely partners that will contribute to the implementation of the goals (see Wash Estuary Strategy Group, 1996). Consequently the plan outlines numerous goals that require active involvement from authorities, organisations and individuals if it is to be successfully implemented (see, for example, Table 6.3). The secretariat's intention is that the plan would be formally adopted by those involved as a general framework for the sustainable management of the Wash (Ian Paterson, *pers. comm.*). Following publication of the draft plan, the

Table 6.2 The Scope of Management Plan Issues in the Wash.

Chapter 1	Introduction
Chapter 2	Flood Defence and Coast Protection
Chapter 3	Planning and Development
Chapter 4	Landscape
Chapter 5	Ports and Navigation
Chapter 6	Marine Conservation and Fisheries
Chapter 7	Water Quality
Chapter 8	Agriculture
Chapter 9	Military Use
Chapter 10	Saltmarsh Conservation
Chapter 11	Waterfowl Conservation
Chapter 12	Recreation
Chapter 13	Implementation
Chapter 14	Monitoring, Survey and Research

Table 6.3 Example of Management Plan's Policy Structure.

Ports and Navigation Goal 1 **To contribute to the viability and efficiency of port and harbour operations.**	
Objective PN1.	To ensure that necessary port-associated engineering works are carried out with the minimum environmental damage.
Action PN1.1	*The Port Authorities will liaise with all relevant organisations in relation to proposed engineering works in order that the environmental implications are known, evaluated and, if necessary, compensated for.*
Implementation.	Port Authorities, English Nature, Environment Agency, Internal Drainage Boards.
Action PN1.2	*Alternative Uses for clean dredged spoil should be investigated and encouraged wherever economically and practicably possible.*
Implementation.	Port Authorities.

Source: Wash Estuary Strategy Group, 1995, p. 31.

Officers' Group invited representations from local interest groups and individuals to the consultation process, in order to gain wider public support for the finalised plan.

6.3.2.4 The Public Consultation Process.

The secretariat adopted a 'targeted' approach to formal consultation, which was considered more straightforward than the over-complicated process of involving individuals (Peter Raspin, *pers. comm.*). It was considered that any member of the public genuinely interested in the planning of the Wash would belong to an organisation consulted, and could therefore express an opinion. In addition, the greater time and resources required for a wider consultation was beyond the means of the county councils. Over 200 potential consultees were identified, from land owners and farmers fronting the Wash to user-groups and statutory bodies, and invited to comment on the draft plan. Over 80 formal responses were received, together with personal opinions expressed at a public meeting in Spalding (22 February 1995) that suggested to the secretariat that consultation had been reasonably widespread and thus successful (Graham King, *pers. comm.*).

While consultation was necessary, however, the responses were considered disappointing (Ian Paterson, *pers. comm.*), in part because the public's idea of consultation was to say anything and everything on a subject, considerably holding up the process (Robert Bowe, *pers. comm.*). The prioritising of flood defence and coastal protection, the promotion of recreation, and the practice of digging 'borrow pits' were three issues that threatened to halt the progress of the plan. That these issues were all land-based was in part because those management issues below low water are regulated by authorities already on the Officers' Group that are modifying their policies to accommodate strategic goals. Consequently, those affected by management plan goals and objectives had recourse to their regulatory authority rather than the Wash Strategy Group directly. Additionally, the three issues revealed the public's persistent suspicion that the plan is a prescriptive action plan to promote nature conservation above all other interests, rather than a steering document to encourage integration of sustainable development into user-groups' activities. Notably objections came principally from the

farming community, already involved through the NFU, and recreation groups unhappy at their exclusion.

The issue of flood defence and coastal protection, for example, was simply based on the public's misunderstanding of the structure of the management plan. The original layout of the plan did not indicate any order or priority. Besides, the section was providing a context to the rest of the planning goals because implementation of flood defence and coastal protection is primarily the statutory responsibility of the EA (NRA) through their 1996 Shoreline Management Plan. There was widespread concern, however, that Section 4 'Flood Defence and Coastal Protection' did not sufficiently reflect its importance to the area. A typical response was "protection of life and property is of paramount importance. It is NOT of equal importance; it is, I repeat, of paramount importance" (Hay, Wash Estuary Strategy Group, 1995). Recognising these concerns the secretariat's solution was simply to amend the plan and make 'Flood Defence and Coast Protection' Section 2 immediately following the introduction, thereby affording greater recognition to the locally held views.

The interpretation of recreation by the Wash Estuary Strategy Group was also called into question by local individuals and interest groups objecting to the 'promotion' of the natural environment of the Wash. To minimise the impact of tourism on nature conservation and the general environment of the Wash, the plan seeks to encourage the principles of sustainable tourism, and in a tourism context, to promote a greater understanding and awareness of the environmental qualities of the Wash (Wash Estuary Strategy Group, 1995). In spite of the plan's objectives for sustainable tourism, many objectors resented the possibility of *promoting* tourism, believing it would threaten the wilderness character of the Wash. Sutton Bridge Parish Council, for example, declared itself "strongly opposed to any further promotion of the Wash Estuary" and insisted that the word 'promote' should be deleted from the plan. The council also considered any promotion of the Wash would result in "coach loads of tourists descending on sensitive areas, not likely to have any understanding or awareness of environmental qualities of the Wash" (Wash Estuary Strategy Group, 1995, p. 77). Such concerns were also expressed by the NFU, CPRE and the Fenland Wildfowlers Association who advised

"there should be no further tourism plans whatsoever" (Wash Estuary Strategy Group, 1995, p. 79).

The discussion over promoting recreation emphasised the problem of misinterpretation by local interests. Objections came primarily from those excluded from the drafting of the plan, i.e. parish councils, recreation groups and individuals, who considered the quality of the Wash was threatened by an expansion of tourism. The diversity of groups objecting to the policies exposed the reluctance of local user-groups to accept policies developed without their inclusion in the process. The Officers' Group, however, recommended the recreation goals and objectives remain unchanged, because to re-word goals and objectives to suit objectors (who might still object or misinterpret them) would have considerably held up the progress. The refusal to alter or dilute the plan's wording also highlighted the top-down approach taken to developing the management plan. This has potentially important implications for the implementation process, where such mistrust of the Officers' Group is likely to persist and become a problem during implementation.

Mistrust of English Nature's agenda for the Wash was also the focus for the greatest volume of objections received during the consultation process. Saltmarsh around the Wash has traditionally been used to supply material for sea defence works, but it is English Nature's aim to conserve the nationally important saltmarsh resource from being lost to coastal defence maintenance works. French (1997) describes how individual pits ('borrow pits') are dug to a depth of a few metres in front of the sea bank and the material used to strengthen adjacent sea defences. Much of the saltmarsh remains undisturbed, and the borrow pits are expected to infill over a period of around fifteen years. A number of statutory authorities including the EA (NRA), Internal Drainage Boards, and Ports and Harbour Authorities routinely dig borrow pits, but the management plan states "the digging of borrow pits to raise the sea bank is considered to be an intrusion into the remoteness of the landscape and alternative sources of material should be evaluated wherever possible" (Action L1.4, Wash Estuary Strategy Group, 1995). French (1997) also describes how a significant number of borrow pits fail to infill, and thus act as tidal reservoirs, discharging large volumes of water on the ebb tide that causes erosion of the marsh creeks, further eroding the marsh itself.

Objections were raised over the possible sourcing of other materials for defence work based on the cost and the impact on the local environment. Local councils all expressed the concern that importing material for sea defence engineering works would place an unacceptable stress on minor roads and lanes, inconvenience local communities and endanger road safety with heavy transport. The NFU also pointed out that digging of borrow pits to raise the sea bank was an "essential option" and noted that importing material would cost approximately 25 per cent more; a cost partly borne by the farming community. Additionally, consultees (mainly farmers) disagreed with the plan's assertion that the digging of 'borrow pits' was an intrusion into the remoteness of the landscape, or contributed to the overall loss of saltmarsh area. A number of consultees challenged the plan's aim to minimise the digging of 'borrow pits'. Sutton Bridge Parish Council, for example, stated, "We would have no objection to digging of borrow pits in order to protect sea walls" (Wash Estuary Strategy Group, 1995). Significantly, the NRA also considered that "digging of borrow pits, in form of scrapes, for maintenance purposes should be included in the plan" (Wash Estuary Strategy Group, 1995).

In response to the weight of opinion against the policy from farmers and parish councils concerned about the potential loss of rights and implications for sea defences, the Officers' Group accepted that changes would be necessary. If the estuary management plan is to be used as the SAC management plan, the loss of saltmarshes to sea defence could seriously impede the plan's effectiveness and authority. The compromise achieved was a change in the policy to allow the status quo while seeking alternatives when implementing the plan. Additionally, the second Flood Defence and Coast Protection goal was amended from "to encourage alternatives", to "to encourage appropriate alternatives to the further taking of saltmarsh habitat for engineering works or other purposes" (Wash Estuary Strategy Group, 1995). At the Members' Group meeting in Spalding (13 December 1995) dissatisfaction remained because changes in wording would not preclude bringing material into the area. A more acceptable solution to the Members' Group was to reverse the proposed policy in favour of 'borrow pits', but it was pointed out by the secretariat that the plan reflects the current economic, technological and environmental considerations required by MAFF. The issue was left

for further consideration in specific detail through the Shoreline Management Plan, and the secretariat's suggested compromise was carried.

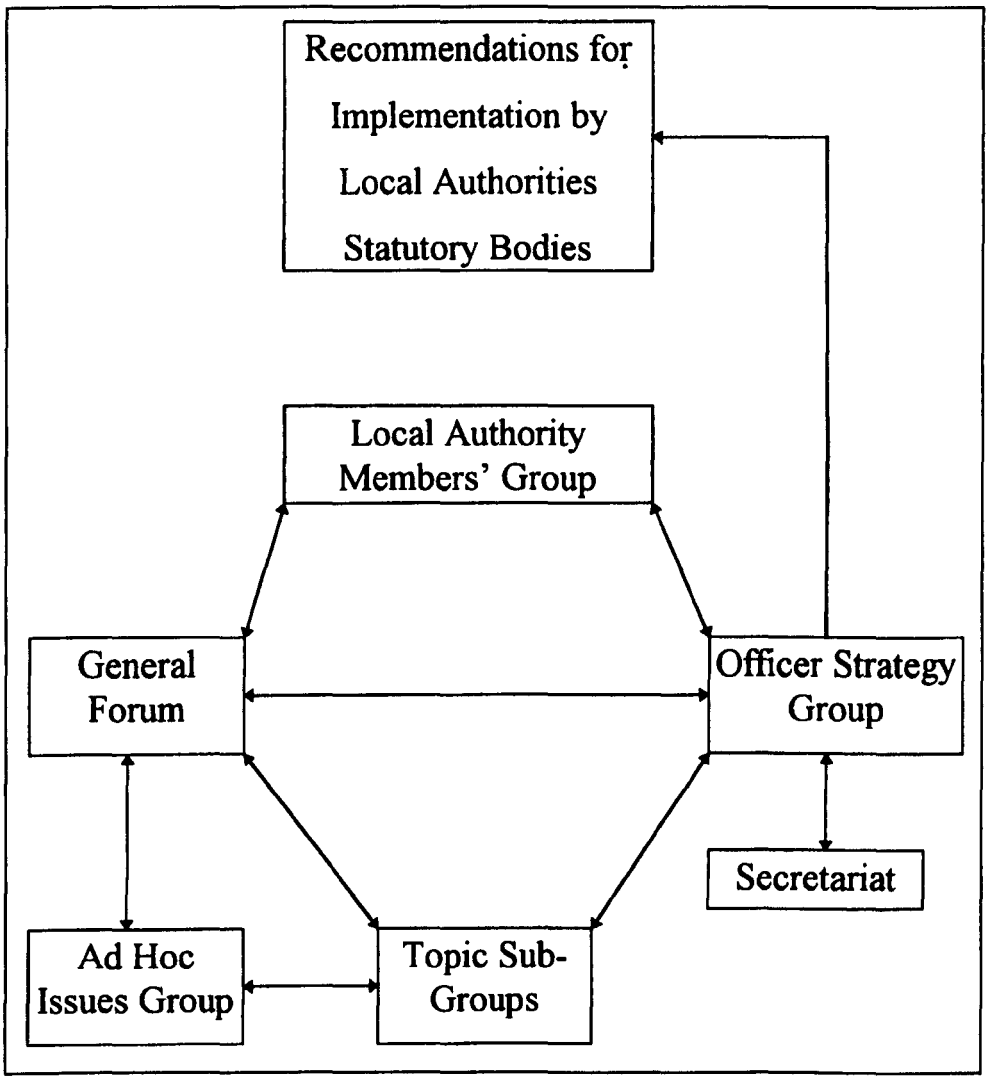
Such compromises reveal the weakness of a plan based on voluntary participation, because if local interests such as parish councils and farmers withdrew their support it would have seriously hampered the plan's implementation. Agricultural activity significantly influences the entire coastal zone of the Wash through run-off and habitat management, and enforced reliance on the statutory authority of the EA (NRA) would be unsuccessful because much of the plan's aims lie beyond its remit. English Nature's compromise strengthened the negotiating power of the farming community and reinforced their defensive stance.

6.3.2.5 Plan Implementation Strategy.

Following the consultation process the Officers' Group suggested amendments and revisions where they considered necessary, and submitted them for the Members' Group approval. The vast majority of the plan remained unaltered and many changes were simply modifications to the detail of the general text or minor refinements to objectives and actions. The consultation did not result in any major modifications, which reflected the secretariat's original aim of avoiding prescriptive policies for defined areas. Instead it encouraged statutory organisations, voluntary bodies and individuals to work in partnership for the overall benefit of the Wash. The finalised plan was launched in Spalding, Lincolnshire in July 1996.

A characteristic of this plan in particular is the development of its implementation strategy, and the degree to which local interests can be encouraged to adopt the plan's goals and objectives as their own planning and management strategies. In order to ensure implementation of the plan, the secretariat's intention was that the roles of existing structures should be adapted, while new structures would be established to incorporate local interests into the plan's implementation process (Figure 6.4). The Officers' Group will therefore continue to operate and ensure appropriate cross-agency co-ordination of effort, monitoring and ultimately the review of the plan. Likewise, the

Figure 6.4 Implementation Structure for the Wash Estuary Management Plan.



Source: Wash Estuary Management Plan, 1996, p. 71.

Members' Group will continue to play an overseeing role to the plan's implementation, particularly as it affects local authority and wider community interests, and any implications for their resource allocation. With the continued action of both groups, implementation of the plan would certainly achieve a minimal level and fulfil particular elements if all used their statutory powers to pursue the strategic goals. This would be an unsatisfactory outcome to the plan, resulting in its production being the end of the process rather that the beginning (Stuart Birkett, *pers. comm.*).

Considering the success of the Agriculture Sub-Group (cited in the DoE's (1996) best practice guide), the development of new sub-groups is planned to develop implementation strategies for sectoral interests such as agriculture and recreation that experience diverse conflicts or incorporate a wide variety of interests. Sub-groups are considered an important aspect of the implementation strategy to make sure the plan does not sink (Robert Bowe, *pers. comm.*). A General Forum has also been formed to raise, discuss and possibly resolve cross-topic issues, and to make recommendations to the Strategy Group for action as necessary. The forum is comprised of individuals and representatives from all Wash user groups including fisheries organisations, nature conservation groups and sport and recreation clubs, and it is considered vital that their views are represented in order to influence the content of the plan and participate in its implementation. Finally, the plan acknowledged that with the forum and additional sub-groups to service and co-ordinate, it would require more dedicated staff time than was available from existing local authority officers. The plan suggested that early consideration should be given by the authorities and organisations represented on the Strategy Group as to whether the appointment of an Implementation Officer was financially feasible (Wash Estuary Strategy Group, 1994).

Ultimately the plan's success will depend on those organisations involved to deliver what they can towards implementation. The co-ordination of the many objectives and actions in the plan will require more dedicated staff-time than is available from existing authorities' officers and the appointment of an Implementation Officer is considered essential (Ian Paterson, *pers. comm.*). The statutory authorities were invited to consider jointly the feasibility of funding an Implementation Officer. The extent to which resources can be found might determine the plan's success, because the Implementation

Officer will encourage those that may not have the resources to contribute to the implementation process unaided (Ian Paterson, *pers. comm.*). The primary role for the Implementation Officer must be to prioritise those actions immediately required or attainable. The selection of initial projects will influence how implementation might be supported in the future by organisations and individuals. When drafting the plan, the aim was to achieve a balance between issues when considering possible management requirements, but those projects initially undertaken will fix the 'thrust' of the plan in the minds of the public and involved parties alike.

A particular worry of the Members' Group at the plan's launch was how much of the plan relied upon those details still to be decided (Jeff Clarke, *pers. comm.*). Councillor Clery-Fox wondered what specifically was to be implemented, suggesting that initial action might be to slim down the plan and decide the 'nuts and bolts' of implementation. The Norfolk Coast Project also suggested that, given the large number of action points, establishing a priority task list may be worth considering (Wash Estuary Strategy Group, 1995). The secretariat considered the implementation process would be very much incremental, hopefully involving more organisations and people as the years go by rather than implementing all actions simultaneously. The problem with this low key approach, however, is that impetus still has to come from the corporate body, i.e. the Strategy Group, rather than relying on constituent representative organisations because they have their own competing priorities and do not necessarily support all initiatives within the plan. Indeed, since the launch of the Wash Estuary Management Plan, political positioning by interest groups and an overall lack of resources has sharply defined the plan's character.

6.3.2.6 Conclusions to the Development of the Wash Estuary Management Plan.

Following the launch of the plan in July 1996, its progress has been dogged by a lack of funding and related political actions by organisations within the Members' Group and consultees. Critical to the development of the management plan has been the position of English Nature, as the initiator of the project, member of the secretariat and chair of the

conservation sub-group. From this central position English Nature represented nature conservation interests within the Officers' Group, pursuing them through policy suggestions, editorial influence on drafted proposals and during debate. Conservation's 'insider' status is important to any plan attempting to integrate environmental and economic interests, but around the Wash suspicion of English Nature's 'hidden agenda' made conservation a highly political issue. In spite of the plan's voluntary approach and emphasis on consensus and co-ordination, certain groups were also excluded from the decision-making process until the final consultation stage. The Skegness Yacht Club, for example, insisted that it should have been involved in more than the plan's expected implementation because it represented one of the largest organisations with local recreational interests (Wash Estuary Project Group, 1995). The secretariat's response was that decision-making was a local authority responsibility and that such interests as the yacht club would be involved in an appropriate sub-group to consider implementation. The response emphasised the difficulty centralised power has in integrating all interests, particularly those operating beyond the statutory planning system. The result of such centralisation has generated resentments that will have to be overcome at a sub-group level with the re-negotiation of management aims with each group that considered itself to have had insufficient representation during policy development.

In part these difficulties are the result of the plan development process, i.e. the inherent weaknesses of current planning theory and organisational theory, and the effective exercise of power within voluntary organisations. In addition, however, some of the difficulties result directly from the DoE's positioning of CZM as a non-statutory extension of the land-use planning system led by local authorities. The lack of resources specifically earmarked for implementation has been a crucial factor because while the Wash initiative was underwritten in its early phases by public authorities and industry, continuity of plan development through implementation remains a problem. The difficulty has been ensuring that those preparing implementation strategies would be confident of funding and the plan did not consider the financial implications of either an Implementation Officer or other initiatives. The lack of funds to support local CZM planning initiatives is something the government has been roundly criticised for because

without adequate funds the launch of the plan becomes simply an end in itself (NCEAG, 1996).

The lack of adequate resources prevented the local authorities from securing an effective implementation strategy among Strategy Group members for prestige initiatives that would secure the plan's identity. As a management plan based on voluntary co-operation and co-ordination of effort, no agreed strategy at the plan's launch also enabled the NFU to exploit fully its political potential within the framework that developed the plan. The NFU's actions during the plan's development were directly in response to defending their members' interests against what they saw as a land-use plan promoting conservation interests over farmers' welfare. By gaining a place on the Members' Group and writing the agriculture chapter of the plan, the NFU achieved 'insider' status, which gave them a far more effective lobby. The plan's potential impact on land-use issues was thus effectively politicised among the politically represented Members' Group and consultees.

In spite of the NFU's involvement on the Members' Group writing the agriculture section for the plan, it did not want to be directly associated with the implementation strategy that might place greater emphasis on wildlife and landscape over and above the farming of the countryside (Simon Fisher, *pers. comm.*). Consequently, the NFU withdrew from the Members' Group at the plan's launch and turned down the invitation to lead the Agriculture Sub-Group, wanting only to remain involved on the basis of consultation and advice, as and when appropriate. By relinquishing its 'insider' status the NFU maximised its lobbying potential by avoiding involvement in the responsibility of implementing management strategies against the best interests of its members. Originally it was considered that the NFU's participation would co-opt the agricultural lobby, but withdrawal ensured the plan's implementation would be opposed whenever a farmer disagreed with a policy's execution. Clearly the NFU had remained aware of its political function to lobby on behalf of its members. It was reluctant to assume a more central role asserting that farming is a major contributor to the local rural economy, and if the NFU led the Agricultural Sub-Group it would have implied an acceptance of the conservation oriented Strategic Goals. A lead-role would have effectively 'silenced' the

NFU with a responsibility to see that conservation and land-use objectives and actions were achieved, irrespective of their impact on agriculture.

The lack of available funding also presented the Strategy Group with the immediate problem of the financing of the Implementation Officer, considered so crucial for success. The post was to be financed jointly by the local authorities represented on the Officers' Group, but at the plan's launch finances had been promised from Norfolk's councils, but not those in Lincolnshire. Boston Borough Council's response was typical, expressing support for the appointment subject to the participation of the other statutory authorities and dependent upon budgetary provision being approved. East Lindsay District Council similarly consider the appointment 'a good idea dependent resources' but could not afford it. Currently the minimum implementation expectation is very difficult to estimate because the post of Implementation Officer was to maintain momentum for the plan's implementation (Ian Paterson, *pers. comm.*). With insufficient funding for an Implementation Officer over the first year, however, (the post could only be supported for 8 months) the plan's potential during its first year was severely limited, which jeopardised its long-term potential.

An offer of approximately £11,000 was made by Lincolnshire Farmers' Wildlife Action Group (FWAG) to help fund a Wash Project Officer who could promote and advise on the goals and objectives of the present plan. FWAG proposed that the Strategy Group would raise the additional £7,000 required to appoint the project officer. This offer was a direct attempt to minimise the plan's impact by 'hijacking' its implementation, because the plan would then have been promoted and co-ordinated by an appointee of the agricultural community. The farming community sought to emphasise that as land owners they represented a key constituent in the success of the plan, but were also likely to be most affected by it and so would resist the implementation of those parts of the plan to which the farming community already objected. Consequently, FWAG argued that with the backing of the NFU and other organisations, the successful delivery of objectives to land owners would be far superior in performance and cost effectiveness than any other method (Wash Estuary Strategy Group, 1996). Following discussions between the secretariat and Lincolnshire FWAG, it was agreed that the ideal situation

would be to have both the Implementation Officer and a FWAG officer as 'back up' primarily on agricultural matters.

Unfortunately, while the plan's integrity has been protected, local authority politics has persistently delayed the plan's implementation. Following the launch, Lincolnshire County Council persuaded its district authorities to contribute to the funding of the Implementation Officer, but this took nearly 12 months to achieve (Peter Raspin, *pers. comm.*). This process coincided with the local elections in April 1996 in which the Conservative Party regained control of the county council and stopped all new officer appointments. Consequently, 18 months after the plan's original launch no Implementation Officer has been appointed and nothing has happened in the Wash to promote the plan' implementation, including the establishing of sub-groups or negotiation of the incorporation of Strategic Goals into local interest groups' own management policies. It is now highly likely that the Wash Estuary Management Plan will fail to accomplish what it set out to achieve as the sustainable planning and conservation management of the Wash is advanced through its SAC designation. While it is doubtful that this is what the DoE intended by promoting CZM through local authority initiatives, without adequate financial support from central government the minimum situation of a management plan recommending policies to achieve sustainable development of the coastal zone that is all that can be expected.

6.4 Conclusion.

According to the DoE (1996), CZM must involve bringing together a wide range of partners through a largely voluntary process led by local authorities. The development of the plan has been achieved through county councils and English Nature collaborating as 'lead agencies' and organisation of professional, political and public representation to discuss the management needs of relevant local coastal zone issues. Being voluntary, the process has been as much about working together to achieve practical results as about preparing plans and strategies. This required a centralising of the decision-making power within the Officers' Group to the exclusion of local interests, including offshore recreation organisations and individuals. With the withdrawal of

MAFF and the reluctance of the DoE to participate (arguing that the local authorities and EN are both its agents at a regional level) power was further concentrated within the Officers' Group and particularly the secretariat. This lead agency's decision to create an Officers' Group comprised only of statutory authority representatives skewed the professional balance towards town and country planners. Being more used to dealing with countryside issues that have a coastal location than coastal zone issues, professional planners could have ignored major marine uses and activities operating across the whole coastal zone and developed a management plan that did not integrate sectoral coastal policies. To some degree this was avoided by the inclusion of the port authorities and EJSFC, but at considerable cost.

The concentration of power at the strategic apex meant that participation by local interests including the port authorities and the NFU was, to some degree, based on a distrust of English Nature's agenda, rather than perceiving a need to integrate sectoral plans and policies. Boehmer-Christiansen (1994) identified how environmental threats invite defensive action and a redistribution of power during negotiations to those who claim to be able to protect and defend interests, which was demonstrated by the NFU during the development of the plan. The ports' participation in the plan was less defensive than the NFU's, reflecting the inability of any policy to influence port statutory operations, but they co-operated in order to protect their future plans for economic expansion in conservation areas. Distrust of the nature conservation agenda in the Wash dominated the consultation process and subsequent launch of the plan. Nevertheless, the voluntary status of the plan helped to ensure collaboration between conflicting interests and the plan's development was widely supported by statutory authorities, NGOs and voluntary organisations alike.

Reliance on voluntary participation and consensus avoided many potential conflicts that might have been encountered during implementation. Those funding the project, for example, might have felt inclined to promote their concerns ahead of the plan's aims and those organisations excluded from statutory involvement would have been implacably opposed to implementation of restrictive conservation measures. The EJSFC expressed reservations about the plan's potential effectiveness, wanting something definite to emerge from the management agreement because there was

nothing that the strategy group could do other than point out likely areas of conflict (Christopher Beach, *pers. comm.*). Many organisations expressed similar concerns over the focus of the plan. The Countryside Commission considered there to be a lack of integration within the document, asking what were the areas of conflict and how they could be resolved (Wash Estuary Strategy Group, 1995). Similarly, the South Lincolnshire Environmental Group considered the plan failed to address problems principally of pollution, fishing methods, agricultural changes and the failure of local plans to give full credence to the protection of the Wash (Wash Estuary Strategy Group, 1995). These criticisms were made by organisations not represented on the Strategy Group, while those within the system have interpreted the nature of the plan differently. King's Lynn and West Norfolk Borough Council's planning officer, for example, concluded that the plan was focused on action that was simply to be negotiated (Jeff Clarke, *pers. comm.*).

Ultimately the case study reveals the weaknesses of the voluntary approach to CZM, developed through local authority initiatives, that the government has promoted. Without direct government involvement in developing a national framework for CZM or contributing to regional coastal initiatives, the DoE continues to rely on the existing statutory land-use planning system whose processes are extended below low water. Consequently, the system fails to involve adequately all local interests due to the restrictions on resources and administrative capacity of local authorities. Owing to the politicisation of land-use policy, particularly in agricultural areas, the aims of such CZM planning will often be misinterpreted by the local population that will skew consultation and support. The failure of the CZM processes in the Wash, one of the UK's most heavily designated conservation areas that lacks the most extreme environmental development pressure, demonstrates that CZM as the government proposes is fraught with difficulty and not guaranteed success. This contrasts with the Netherlands where, with a similar approach to developing a CZM plan for the Voordelta, their plan has enjoyed a greater success. Given the similarities between the national land-use planning systems and central government administration, differences in success are down to the application of CZM planning theory at the local level. It is possible that through comparison between the planning models adopted and the exploitation of power in the policy networks and decision-making structures, suitable alterations to the approach

taken in the UK might be identified. This, and the other aims of the thesis are explored in the following chapter.

Chapter Seven. Discussion and Conclusions.

7.1 The Coastal Zone.

The coastal margin is of critical socio-economic and environmental significance, but there is growing evidence that traditional sectoral resource management approaches to activities in coastal areas are inadequate. Despite best efforts in many cases, natural coastal systems continue to degrade, resource-use conflicts are mounting and the socio-economic benefits that could be derived from the natural resources of the coastal margins are being lost (GESAMP, 1990). Environmental degradation is symptomatic of the sectoral planning of competing coastal activities, implying the potential gains achievable through effective integration may be considerable.

The fundamental problem is that the coastal zone remains the shared responsibility of many agencies, at all levels of government, but the primary responsibility of none. Hence, while sectoral approaches have evolved to manage specific resources and activities in isolation, the systems being managed remain part of the complex web of ecological processes and human interactions.

The plethora of agencies with statutory responsibilities for activities concentrated in the coastal zone, and the complexity of its administration, is the principal reason why a special effort is needed to 'manage' the area. As undeveloped and uncommitted coastal land and water become increasingly rare commodities, management and conservation of both unspoilt and developed areas have assumed a new priority in the light of the growing demand on coastal resources. Local coastal planners need to protect the capacity and integrity of existing development and avoid further undue pressure on undeveloped areas. CZM provides a route for this, addressing key issues for an area and ensuring that sectoral plans do not act in isolation (see Chapter 2). In summary, the problem is to establish how the interests of economic development of the marine milieu can be reconciled and how to protect the environment while avoiding, or at least reducing, conflicts between various competing user groups (Charlier and Vigneux, 1986).

The concept of CZM presupposes a sound basis for isolating the 'coastal zone' as an area justifying special attention in planning and management terms. Scientists define CZM in terms of their discipline, while environmentalists tend to adopt a defensive stance interpreting 'management' as prohibition, prevention and protection. From Chapter 2 it is clear that while the zone comprises the interface between land, water and the atmosphere, it defies comprehensive definition and the physical and administrative area of concern will always vary with the issues under consideration. At any one locality the coastal zone may be characterised according to physical, biological or societal criteria, which need not, and rarely do, coincide (Carter, 1989). Delimitation of zonal boundaries is not normally possible because, more often, such limits are marked by environmental gradients or transitions. Understanding the processes and products of interaction is rarely simple, but it is an essential challenge for CZM. The coastal zone therefore provides a challenge to planners not to be overcome in the sense of controlling the environment, but rather to be met with imaginative and flexible responses that must be based on firm understanding of the workings and dynamism of the coastal environment (Viles and Spencer, 1995).

7.2 Coastal Zone Management.

In 1989 the Coastal Area Planning Network agreed that CZM best described the practice of managing coastal regions, uses and resources. As a practical approach it was defined in "a dynamic process in which a co-ordinating strategy is developed and implemented for the allocation of environmental, socio-cultural and institutional resources to achieve the conservation and sustainable multiple-use of the coastal zone" (CAMPNET, 1989). The IPCC described CZM as "a desirable management tool to address coastal resource use issues" and recommended CZM plans to address the impacts of global warming (IPCC, 1992, p. 29). CZM was endorsed at the United Nations Conference on Environment and Development 1992 (*Earth Summit*) as the mechanism to solve problems of coastal resource planning. Under Chapter 17 coastal nations committed themselves to integrated management and sustainable development of coastal and marine environments under their jurisdiction. CZM therefore concerns all aspects of human activity and all environmental matters affecting an identified region or locale,

however it is defined. The OECD (1993) considered it distinguishable from management of particular activities within the coastal zone because their operational specifics are relevant only insofar as they impact on other functions within the coastal zone, between coastal zone activities and activities in other regions. It can be justified due to the concentration and variety of human activity in the coastal zone and the complexity and diversity of the coastal environment itself. As a theoretical construct, CZM involves a contemporary notion of sustainable use of natural resources and a holistic approach to problem solving, incorporated into a framework strategy that promotes integration.

Finding a suitable methodology for managing the ever damaging relationship between society and nature is extremely difficult and, as yet, no simple solution has been developed at an international or national level. In the multi-sectoral, multi-agency situation that characterises the coastal zone, it is easy for government policies emanating from different sector areas or governmental levels, to conflict. Pravdic (1992) considered current environmental management strategies to have outlived their usefulness, and suggested that new approaches were needed to integrate the economy and environment on a regional and supranational level. In recent years there has been a marked shift in coastal management from direct resolution of conflicts to planned avoidance of them. For many coastal management issues, however, planning may owe little to environmental paradigms but a lot to political expediency (see Chapter 5). The shift from sectoral, multiple-use perspectives to an integrated, sustainable development approach, requires co-ordination of national government agencies and regional organisations (Vallega, 1993). The concept of sustainability requires planners to focus their developmental policies on the renewable components of the coastal zone, resolve conflicts and secure an equitable balance between strategic development and conservation. The task, acting to reduce deleterious effects without transferring problems elsewhere (i.e. farther along shore or out to sea), is considerable, especially considering the range of coastal activities (Chapter 2). Pravdic (1992) warned, however, that environmental management cannot be governed by the sole application of concepts such as assimilative capacity or sustainability because a well-defined principle serves only as the conceptual basis of a comprehensive strategy.

The OECD (1993) identified the general approach to CZM in which government established policies and development and conservation strategies that local authorities implemented. Further, the IPCC (1994) considered that a national programme should facilitate integrated decision-making through a process of co-operation and co-ordination among sectors. Governments need to develop guidelines identifying where national priorities should override local considerations and *vice versa.* This is not easy, because different levels of power are involved. Government agencies tend to form elite internal groups that establish and maintain co-operative relationships between themselves, progressively segregating local coastal interests from decision-making. Interest groups and issue networks inevitably become a feature of any bureaucracy (Chapter 3). There are two basic approaches to the institutional arrangement for managing the coastal zone. First, coastal nations may make an institutional response and redesign the system, changing the laws, structure and responsibilities of management agencies, even creating a specific coastal zone authority. Carter (1989) identified the 1972 US Coastal Zone Management Act as the most comprehensive and well-defined example of such a management strategy. Alternatively, coastal nations may act within prevailing legal and organisational frameworks through the development of new planning and management techniques and tools to improve the working of resource management systems. The result is a nebulous association of 'interested' parties with a lead agency in a fragmented *ad hoc* approach. Usually, heavily oriented towards regulation, the main policy instrument for resource allocation at a local level continues to be land/water-use planning or zoning (Hildebrand and Norrena, 1992). To graft CZM onto existing administrative, judicial and legislative structures is difficult, often resulting in inter-agency conflict. Resolution of such conflicts inevitably requires compromise solutions, and the coast suffers from less effective management (Carter, 1989). Neither the UK nor the Netherlands has developed a new institutional approach, both preferring to develop processes from within their existing administrative systems.

7.3 Coastal Zone Management in the UK and the Netherlands.

In 1992 the UK government committed itself to furthering the management of the coastal zone within a clear national policy framework that considered landward, seaward and intertidal interaction in an integrated framework (DoE, 1992a). At the same time the DoE rejected the Environment Select Committee's proposal for the imposition of top-down, comprehensive national or regional coastal plans. In spite of accepting the argument for integrated coastal planning and management, the government argued that sectoral responsibilities for managing the coast should be maintained. Consequently, there is no single framework for British CZM, but a plethora of planning initiatives (including development plans, marine SACs, LEAPs, and SMPs) and sectoral pattern of regulation and management across the coastal zone (Chapter 4).

Just as in the UK, Dutch coastal planning can be characterised by its sectoral approach to management issues, hierarchical planning structure and centralised policy development. In a sectoral system valuation of local coastal resources is, to a significant extent, dictated by market forces and regulated by agencies (including government departments, national and local statutory bodies) that act to manage economic activities competing for access to resources, occupance and use of marine areas. The ability of any central government to implement policy is constrained by the fragmentation and limited co-ordinating capacity. The constraints external to the centre derive from its non-executive nature, which makes the centre dependent on other organisations to achieve its aims. The co-operation of local authorities is not always forthcoming and cannot be guaranteed, so government must operate through a number of organisations and a variety of policy networks in a complex differentiated polity. In terms of CZM, designating any local coastal zone and designing an organisation to integrate all agencies is a major task.

The development of institutional strategies, such as CZM, is a complex process, in which a range of individual and institutional actors are implicated (Marsh and Rhodes, 1992). Local authorities are required to develop plans that consider coastal issues and problems many of which are generated by events outside the region and managed by

agencies operating at national (or international) level, but without the remit for planning control beyond the low water mark. The UK government has reduced its direct involvement to a series of guidelines and discussion papers that suggest a coastal policy without committing itself to a fully developed national coastal zone strategy (Chapter 4). While government has tried to portray policy outcomes as representing the will of the local organisation, in many cases they are the product of other influences, such as those of central government, other local institutions, the EU, and international companies (Goodwin and Painter, 1996). Where such influences are not direct or explicit, there may be an indirect influence as decision-makers shape the range of potential policies in line with their expectation of reactions from other actors. Local and regional authorities are required to promote and implement policies that call for restraint in development in response to national and local priorities and such policies can be a source of conflict locally. Crucially, the process of agenda-setting and the influences on it need not be (and often are not) local and the support of national and international agencies giving clear guidance to implementation is of vital importance.

Within both the British and Dutch planning systems no one organisation has overall control in the coastal zone, even in a limited area, and each agency acts with different remits. In the UK and the Netherlands, however, with their relatively centralised system of public administration, local areas, however defined, are neither autonomous, nor isolated from wider state structures, political processes and economic links. The institutions of elected local government are local in the sense that their territorial competence is limited, but, even before the relative decline in power, elected local government was subject to a national framework of regulations and standards (Goodwin and Painter, 1996). All government activities and policies therefore have implications for local areas, whether this is formally acknowledged or not by policy makers. The governing of localities is not only (nor necessarily mainly) a local matter. While this situation might be a disadvantage in the UK because of the government's reluctance to assume control of CZM within a nationally developed framework, in the Netherlands it is potentially an advantage given the regional organisation of the Rijkswaterstaat and its remit for North Sea affairs.

Other similarities between the UK and Dutch planning systems include the jurisdictional divide of planning responsibilities across the low water mark, central government's role as competent authority for marine development, and the importance of provinces co-ordinating national policies and local plans (Chapter 5). Likewise, an integrated form of planning specific to the coastal zone does not exist in the Netherlands, and all elements of coastal planning are embedded in the 'normal' system of planning control, which is focused on coastal defence and water management (i.e. coast*line* management). Public recognition of the need for coastal defence has led to the acceptance of central government's responsibility for environmental planning and management of the majority of the coast, despite municipalities being the only legally binding planning authority. The present system of Dutch coastal planning operates on the three levels of government, i.e. locally (municipalities and water boards), provincially and nationally, especially by the Rijkswaterstaat (also responsible for coastal defence, national waterways and harbours). The system is highly centralised, but perhaps the crucial difference to the UK is the Rijkswaterstaat's role in policy and technical issues for the coast and North Sea.

The Rijkswaterstaat considers integrated management of the coastal zone essential to find an equilibrium between the interests of socio-economic development and maintenance of a natural dynamic system (Ruig, 1997). National policies on physical planning and integrated water management, together with nature policy and the policy of dynamic preservation, form powerful sectoral tools for sustainable CZM, but presently the focus remains firmly fixed on shoreline management and coastal safety (Ruig, 1995). Where the Dutch approach differs, however, is that while the coastal planning system focuses on shoreline management, national policy addresses CZM from a different practical perspective to the UK, in that national government oversees (and funds) the development of coastal management plans. Changes to the coastal defence policy in 1990 have enabled a new approach to be taken to coastal planning that has broadened the focus to incorporate more coastal zone issues. The choice of a dynamic preservation policy suggests that all erosion will be counteracted and loss of valuable beach and dune areas will be prevented, primarily through artificial beach nourishment to maintain the coastline at its 1990 position (Chapter 5). For the implementation of this policy the so-called 'basal coastline' has been calculated for the entire coast, which is

annually compared to the actual coastline to identify areas needing nourishment. Implementation of this policy has, crucially, been nationally funded through the regional Rijkswaterstaat, co-ordinated with provincial planning responsibility, and the actions of water boards and municipalities through statutory POKs.

Paradoxically, perhaps, the development and implementation of dynamic preservation have increased pressures on the coast. As natural defence structures, for example, dune areas have historically been protected by water boards, but with their defence importance lessened by the 1990 policy their potential for tourism and recreation might now be exploited. Likewise, beach nourishment is being considered to reclaim land for infrastructure, industry and housing projects including an airport at Zandvoort, extension of Rotterdam harbour (Maasvlakte) and a 15 kilometre long stretch of coastline to allow urban expansion between the Hague and Hoek van Holland (Ruig, 1997). None of these plans is needed from a coastal defence perspective, but the security afforded by dynamic preservation has enabled such proposals to be considered increasingly within a CZM framework.

7.3.1 Developing CZM at a Local Authority Level in the UK.

In the UK, the DoE is intending to achieve CZM locally through 'extending' land-use planning to consider issues in the inshore waters when developing non-statutory planning policies. With local authorities responsible for this process, local coast*line* management rather than coastal *zone* management has often been the result. Conversely, in the Netherlands shoreline management is automatically focused upon and CZM has instead been developed centrally by the Rijkswaterstaat, which has primarily considered the planning and management of marine issues and co-ordinating their integration with the statutory land-use planning system thereafter. This approach has created a more authentic CZM system that respects sectoral administration in the coastal zone while effectively integrating their management approaches.

The experience developing the Wash Estuary Management Plan, a recent example of CZM outlined by government advice, reveals weaknesses in the system's potential for

effective integration of coastal planning exacerbated by the constraints of the national system. It had been developed in accordance with government's insistence that CZM must involve a wide range of partners in a largely voluntary process is described as a practical approach, focused as much on achieving results as preparing plans and strategies (DoE, 1996). Through working together at the local level solutions have been tailored to local issues and take account of local interests. In addition, participation has relied on a sense of joint ownership involving a growing sense of responsibility, commitment and mutual trust, associated with involvement in the decision-making process of plan development. Three factors, however, particularly reveal the deficiency of locating CZM solely at the local authority level, and the weaknesses in the government's approach. They are the ability of planning mechanisms only to consider the coast*line* rather than the coastal zone, the vulnerability of the development process to political action, and the lack of funding to back the project. These contribute to the understanding that CZM's potential remains limited within the UK, despite government's desire for integrated management of the coastal zone.

While CZM is focused through the sectoral planning system, achieving consensus on management issues in the Wash has not been easy because individual interests have been required to compromise their priorities where actions subject to statutory obligations override other matters. These have included water quality, coastal defence, port authority actions and fishery management, but excluded potentially detrimental marine developments from planning consideration (Chapter 4). Consequently, those issues that could realistically be considered by a local authority led coalition were reduced to nature conservation, land-use development, agriculture and recreational impact. These discussions, all focused on land-use issues, illustrate the limitations of developing a plan though local authorities without offshore jurisdiction, hence it is coastline planning rather than CZM.

In any multiple-actor coalition such as the Officers' and Members' Groups, the dynamics of changing needs and fluctuating power generates conflicts among different sectors and the opportunity to negotiate policy outcomes is there for whosoever can seize power to influence the bargaining process. Decision-making on policy and practice are the outcomes of the political struggle between members, but the opportunity

to devise such solutions across a broad consensus is considered by government to be an advantage of the voluntary approach. Many organisations in the Wash were excluded from the decision-making process, emphasising the centralist nature of the plan's organisation and its inability to incorporate agencies below the low water mark. In the Officers' Group, the large majority of representatives were local authority planners who were responsible for controlling the statutory planning responsibilities around the Wash. Management was subsequently considered through the statutory planning mechanisms, focusing on land-use management strategies at the coast, with contributions from the major sectoral marine interests in the Wash (i.e. English Nature, National Rivers Authority, Boston Port Authority and the Sea Fisheries Committee). While co-ordination of local planning authorities' policies might be considered a success as a *planning* exercise with the launch of the plan that has sought to consider marine issues, it is unable to ensure the effective implementation of any policy below low water. The limited participation of the Environment Agency (then the NRA), occupied with the development of a Shoreline Management Plan simply compounded the Strategy Group's inability to ensure the integration of marine issues and interactions between developments on land and at sea.

The Wash Estuary Management Plan has also demonstrated the vulnerability of the voluntary approach to local political action. The positioning of vested interests in the organisational structure was crucial in determining the policy outcomes of contentious issues such as agriculture and coastal defence, and policy development became dominated by entrenched sectoral interests with their own agendas, strongly held values and political goals. The ability of any organisation to exercise political power depended on its position with respect to the Strategy Group (i.e. its insider/outsider status) and the ability to engender local political support. Involvement was thus centred both on contributing expertise to further the CZM agenda for the Wash and defensive manoeuvring to ensure that decisions will not adversely affect daily commercial activity (see Chapter 6).

In addition to the limitations of a coalition of local government authorities and interest groups to plan for the entire coastal zone, implementation of management initiatives has been impossible to achieve primarily because of the difficulties associated with funding.

This is not a problem specifically related to the Wash. Currently there is no direct funding from the DoE for coastal projects. The majority of CZM initiatives therefore depend on organising bodies' staff time, administrative facilities, accommodation and funding from the existing budgets. In addition, assistance is often given by English Nature, the Countryside Commission or by industry affiliating CZM to in-house projects related to the coast. Projects need more funding than their original 'pump priming' to secure implementation, which makes access to adequate funds the crucial factor influencing the success or failure of locally developed CZM strategies. Otherwise, with a lack of financial independence, plan implementation is limited to 'those who pay the piper calling the tune'. With limited government assistance and local authorities facing increasing cutbacks in expenditure, reliance on the private and voluntary sectors to fund CZM initiatives can only increase. The DoE (1996, p. 48) recognised that, "The challenge to the entrepreneurial networking skills of project leaders and their partners will be immense", but failed to identify secure alternatives from government funding to finance implementation.

In the Wash, the non-availability of resources prevented the initiation of management projects following the launch including the appointment of an Implementation Officer, to promote and oversee the development of the plan's execution (see Chapter 6). With insufficient funding for either an Implementation Officer or a planned programme of management projects, momentum for the plan's execution has not been maintained by local authorities' statutory powers, and this is hardly an adequate solution for a non-statutory plan. The government's policy not to fund locally developed CZM programmes has an ironic weakness because while the DoE (1996) identifies industry as a source of funding, there is little opportunity in the Wash to secure commercial backing for the management plan, unlike in more industrialised (developed and polluted) estuaries like the Humber or Tees. Consequently, a plan that seeks secure the sustainable development of the Wash's coastal zone and protect its environmental quality, cannot be implemented without financing from industry that itself damages the resource.

7.3.2 Developing CZM at a Local Authority Level in the Netherlands.

The Beleidsplan Voordelta considers multiple-use of the coastal zone from within existing planning systems in the Netherlands and illustrates the organisational structural of coastal planning and management in the Netherlands that forms an aim of this thesis. It is noteworthy in its policy and instrumental ambitions to preserve ecological processes, guarantee coastal safety and safeguard economic activities including fisheries, recreation and tourism, and industry (Alphen, 1995). The plan is non-statutory and voluntary, which reflects the plan bridging a coastal planning system divided across the low water mark, and the encompassing of a diversity of user-groups involved in the area. The Voordelta Plan represents an alternative to the UK's approach particularly in the focus of its policy approach and implementation strategy. Given the similarities in the administration of coastal planning, there might be strategies that the UK could adopt within its own planning system to make CZM more effective than it currently is as a non-statutory extension of the land-use planning system.

The plan originated in the need to protect the newly forming shoals offshore from the completed Delta Works and provided an opportunity to plan the coastal zone that was increasingly coming under development pressure from the fishing industry, tourism and industrial development (Chapter 5). Conflicts in the Voordelta were primarily between fisheries, recreation and conservation, which therefore became the management plan's focus. In effect, the plan aimed to reorganise marine management through integrating sectoral marine policies with one another and with land-based planning mechanisms in a sustainable economic framework. The plan's initiation and development were overseen by the Rijkswaterstaat (North Sea Directorate) because the majority of the plan's area was situated beyond provincial and municipal jurisdiction, crucially making central government the competent authority to lead any initiative. While the plan aimed to integrate sectoral activities in the coastal zone, issues such as navigation, military use, aggregate extraction and land-use planning all operate on a statutory basis. Nevertheless, the plan's organisational approach was significant. The Rijkswaterstaat invited government departments and the two provinces to participate in a steering group preparing the Voordelta plan, but deliberately excluded (politically motivated) municipal authorities and NGO representatives from the decision-making process

(Chapter 5). Unlike the UK's bottom-up, decentralised policy approach to CZM, the approach in the Voordelta could be characterised as a top-down, highly centralised approach based on planning and engineering expertise and therefore apolitical and based on consensus. This approach exemplifies much of the Dutch approach to all issues in coastal planning (Chapter 5).

A less pronounced political structure meant long-term goals could be focused on, but the exclusion of local stakeholders created difficulties. Public participation was restricted to consultation rather than direct involvement, resulting in the politicising of the planning process and polarising of management issues as individual organisations sought to secure their own interests. During the decision-making process, planners were prone to balancing conflicting interests according to political lobbying rather than a technical assessment of proposals, generating a number of recurring objections, new conflicts and delays finalising the plan. By failing to build consensus for environmental policies there was the potential for public rejection of the plan, as in the Wash.

In the sectoral management of the multiple-use coastal zone, both the UK and Dutch approaches have been reduced to having to overcoming short-term problems generated by political local interests. Policy conflict is inevitable in the coastal zone. In the Voordelta the Rijkswaterstaat's central role means that implementation is likely to be at least partially successful. As a government project, implementation is assisted by sufficient funding both for specific projects and necessary logistics (including officer time, secretarial support and continued policy development). While participation in the plan may be voluntary, as the competent authority offshore central government is able to enforce CZM policies, such as nature conservation areas being respected by the fishing and marine industries. Government can also influence adjacent land-use planning by the municipalities to ensure developments are allied to the aims of the CZM plan.

7.3.3 Conclusions.

Both the Wash Estuary Management Plan and the Beleidsplan Voordelta were very similarly produced, adopting matching models of planning and organisational

approaches, within the same planning ideologies. Both plans were based on CZM's fundamental aim of integrating the planning and management of all interests in the coastal zone holistically through the active participation of all interests in the decision making process. Participation in the development of the management plans was voluntary and relied on the acceptance of to the policies being pursued by all parties involved. Such local governance, dependent on public participation and locally developed planning formed central principle upon which both plans were developed. Unfortunately, while models of governance and localism in the coastal zone are both promoted as ideal planning strategies (see Chapter 3) planning practice is not as advanced as the planning theory that supports it, and achieving truly holistic planning of the coastal zone is not yet possible.

Like the Wash Estuary Management Plan, the organisational structure of the Voordelta Plan is described by the "Hierarchy, Co-ordination and Broadly Based Interest" model (Chapter 3). Healey (1992) characterised this model as levels of government co-operating in partnership through a process of techno-rationality, pluralist policy and co-operatist negotiation, dependent on the public sector's role to organise successfully along hierarchically integrated and co-ordinated lines. Through this approach central government was the locus for overall policy control within a broadly based representative group whose job is to interpret and implement management policies. As such, all those locally and directly involved in the decision-making processes were able to promote their own interests and challenge the public sector usually responsible for the management of the coastal zone. This situation reinforces the models of localism and governance promoted by the DoE.

In spite of the differing levels of involvement by the UK and Dutch government in the planning process, neither utilised the development approach to form the content of either plan. Both plans were created centrally and imposed on the respective areas. An alternative might simply have been to require all planning decisions from whichever level of government to be based upon explicitly stated and politically agreed criteria by all user groups within a defined coastal zone. Certainly within the British system, this would have the advantage of moving away from the hierarchical model of policy articulation in statutory planning, towards one that recognises the *de facto* position of

each level (including local interests) as an active participant in the interest mediation process (Healey, 1992).

7.4 Conclusions.

7.4.1 Introduction.

The case study approach of this thesis followed Sabatier's (1986) advice that the most useful unit of analysis for understanding policy development is the policy sub-system, i.e. those actors from a variety of public and private organisations who are actively involved in the policy programme, from which to yield causal inferences concerning the utilisation of CZM policy on the basis of multiple sources of evidence. As Doornkamp (1992) suggested, the comparison of administrative response to the needs of coastal management in the UK and the Netherlands was possible, but it is also likely that such a comparison is possible for the coastline as a whole rather than selected and similar locations (see Chapter 1). In addition, conclusions drawn from a comparison of the two case studies accords with the IPCC's (1992) suggestion that many countries could benefit from an exchange of experience leading to the development of comprehensive guidelines for establishing and implementing a national coastal zone programme. Indeed this is the path followed by the EU's Integrated CZM Programme (see Chapter 1), which aims to stimulate a broad debate and exchange of information among the various actors involved at local, regional, national and European levels.

Using the interview to research the case studies was also a successful technique through which to gain insight into the inner mechanisms of policy development. Overcoming the problems of gaining immediate access to appropriate organisations, and at the right level was time consuming, as was overcoming initial ignorance of the organisational structures in the Wash and Voordelta. By following suggestions from interviewees during research, a 'saturation point' was reached at which the important players had been seen and additional contacts were no longer considered necessary. Nevertheless, with no definite rules on how many people to interview, research was potentially

open-ended. Finally, using open questions, formulating standard questions for an interview was never possible and occupied a great deal of time. Nevertheless, it represented an effective research technique that was, as Dunn (1983) suggested, repeated in a variety of settings.

7.4.2 CZM as an Integrative Planning Process.

In both the UK and the Netherlands, CZM is promoted as a planning process that integrates statutory planning mechanisms across the jurisdictional divide of low water in order to achieve the more holistic and sustainable planning of the coastal environment. Both governments believe that the estuary or short stretch of open coast is the appropriate organisational level at which to promote CZM as a local voluntary and non-statutory planning mechanism. It is argued that the content and scope of plans can then be dictated by local issues, and policies more effectively implemented through the existing activities of QUANGOs, local government agencies, and by initiatives undertaken by local interest groups supporting the plan due to their active involvement in the decision-making process.

The positioning of CZM in this way by national government protects itself from having to take definitive action. The development of CZM policy in the UK and the Netherlands has followed a traditional path, which Hall (1993) asserts places undue emphasis on how policy changes are related to previous policies where the chief participants are experts or officials in a particular field (see Chapters 4 and 5). Neither the UK nor the Netherlands possesses a national CZM policy framework, but the differences in approach between the two systems has revealed much about how CZM might be further developed. In the UK, CZM has been grafted onto existing administrative, judicial and legislative structures and is in effect required to consider marine issues by the extension of land-use planning below low water. With no statutory backing, this approach has reduced what can be achieved to little more than redefined local authority planning with a coastal location. Conversely, in the Netherlands regional bodies of central government have sought to develop management plans that incorporate marine issues into the statutory land use planning system rather than extending the

planning system beyond low water. The result has been to create non-statutory plans that describe area-specific management strategies and overarching environmental policies in which land-use planning is used to control access to inshore areas, rationalise uses of the coastline, and creating zones of preferred use across the whole coastal zone.

7.4.3 Policy Implications of the EU's Integrated CZM Programme.

CZM has been on national and EU policy agendas for at least twenty five years. It is recognised that EU involvement can deliver important added value to actions taken at a national or local level. EU policies with an influence on the coastal zone, and the need for exchange of experience, are valid reasons for Community action in the field, and Europe has become an important player in UK (and other Member State) coastal management. A great diversity of coastal management projects are now supported under various funding instruments including LIFE, INTERREG and PESCA (Huggett, 1998). While British coastal management has clearly benefited from EU support, it is less clear how the coasts of Europe as a whole will benefit from the EU's involvement with CZM. For example, in the most recent interim report, the EU identifies only that the programme will provide the information necessary to derive practical conclusions concerning how to promote and facilitate CZM (European Commission, 1998). The EU remains unspecific about the proposed role of CZM and fails to identify a framework that would allow the implementation of a European Coastal Strategy.

According to the European Commission(1998), the work of the EU Demonstration Programme to date bears out the underlying assumptions that the diversity of administrative and organisational arrangements demonstrates the need for a thorough review of the situation across Europe in order to guide EU policy and strategy with regard to coastal management. The programme has successfully involved a range of actors concerned by CZM including scientific and academic institutions, public authorities, and notably in the UK projects, voluntary organisations. In all of the projects the general public will become involved as plans are developed and all projects envisage or have already entered into consultation with representatives of the different

sectors of coastal zone activity, but many have also noted particular difficulty in finding a mechanism for involving the private sector in the planning process.

An important factor to have emerged from the EU programme is that economic and social motives are at least as important and environmental motivation underlying the search for means to improve and integrate management in the coastal area. Likewise, that organisational arrangements range from the informal and/or voluntary set up (i.e. a 'bottom-up' approach) to highly formal nationally or centrally led operations, which suggests that there is no *one* correct formula for successful CZM. This is illustrated by the case studies in the UK and the Netherlands. In order for CZM to be successful, however, mechanisms must exist for liaison between local, regional and national planning systems; between the public administrative system and private sector management and control systems; and between Departments and Divisions within both the public and private administrative systems and between private and public organisations. Clearly, this is where the success of any CZM programme lies and in the UK the government is resistant to the idea of a programme of integration either horizontally (i.e. coastal matters across all government departments) or vertically (i.e. from central government to the local coastal user). It must be doubtful that any European initiative will overcome this position.

While it is one thing to call for the development of a Europe-wide coastal zone framework, it is quite another to identify the most effective solution and articulate this in practice. Even if a community-wide coastal strategy is finalised and implemented in terms of legislation, without the financial resources and incentives available to promote the programme any such initiative will have little influence. To date these issues have not been addressed and until they are, the policy implications of the EU Integrated CZM Programme must be considered minimal.

Within any such framework the approach to delivering CZM at the Member State level will probably remain flexible, although guidance on what state CZM programmes or strategies should address will be important (Huggett, 1998). Consequently, the policy implications of the project in the UK will serve only to add strength to the argument of NGOs and QUANGOs when lobbying government. To date government has been very

effective at resisting arguments for integrated CZM centred within the statutory land-use planning system, and this is unlikely to change.

7.4.4 Lessons Available to be Learned from the Case Studies.

From a local planning perspective the coastal zone is a major focus of economic activity and development pressure that will influence any CZM approach, but the priorities and values that local authorities attribute to coastal resources may not match those of national agencies, especially where national economic interests are concerned. The OECD (1993) considered that relying on the market to establish values that will direct planning unwise because of its frequent failure to reflect accurately the importance and value of certain resources, or the need for intervention on the part of an authority to correct the balance. The aim of this thesis has been to assess the potential for effective integration of coastal management organised through a local 'enabling' authority (see Chapter 1). In both case studies the potential to organise CZM planning through enabling authorities was highly successful. The plans both involved a wide range of local interest groups and industries in the decision-making of local coastal management policies. Likewise the enabling authority formed the focus of debate and consultation about the appropriate management aims for the local coastal zone for national government agencies and local interest groups alike. The enabling authorities for the Wash and the Voordelta both produced plans that have been launched and that now provide a focus for the management of their respective coastal zone areas.

In spite of the differing approaches of the Wash and Voordelta enabling authorities, bottom-up and top-down respectively, both demonstrate the difficulties associated with using this planning approach. Healer's reservations of the Hierarchy, Co-ordination and Broadly Based Interest Model, centred on localities remaining subject to a strong centralist regime and hierarchical co-ordination depending on the public sector rather than addressing the problems of co-ordination between levels and agencies. What is discernible from both management plans is the centralised nature of the local decision-making organisations, dominated by central government agencies and local planning authorities. Many of the disputes in the creation of both plans, for example,

stemmed from the original decisions taken by the initiators, which in both cases were central government bodies and the development of both CZM plans relied heavily on the traditional approach of leaving planning professionals to draft management plans while being directed by the coastal and local expertise of decision-making fora. Consequently, much of the negotiation over each plans' details focused on maintaining continued support from participants rather than seeking to achieve the best for the management plan area. What both CZM plans therefore appear to achieve is merely the co-ordination of the public sector, rather than the integration of all local interests in the coastal zone. This problem has continued throughout the implementation process, where in the Voordelta fisheries and offshore recreation groups continue to oppose zonation of, and exclusion from, conservation areas. So too in the Wash, where policies seen to be affecting access rights and income are opposed as vehemently as conservation designation and promotion of tourism. The launch of the management plan is not an end in itself, but is merely the initiation of the greater process of implementation in which local interest groups must be persuaded to adopt policies decided by the enabling authority that they were not necessarily in full agreement with. It is implementation of any plan that demonstrates the ultimate success of the planning process.

The principal aim of the thesis is to establish whether government's desire for a voluntary non-statutory approach to CZM through an enabling authority fulfils its ambitions for an area-specific management strategy. The conclusion of this thesis is that it does not, for a variety of fundamental shortcomings in the approach to CZM that the DoE has promoted. In their arguments from the early 1990s culminating in both the *Policy Guidelines for the Coast* (DoE, 1995) and *Guide to Best Practice* (DoE, 1996) the government has emphasised its commitment to sustainable use of the coast through integrated management it has deliberately 'missed the point' of what CZM (as a theoretical construct) truly represents. Promoting local authority led management, aimed at integrating policies and practice, but within the current planning system has excluded the planning and management of marine issues and those interactions across the land-sea interface. The government's insistence that sectoral management should be maintained has also ensured that those activities outwith the planning system (i.e. agricultural land use, coastal defence works and harbour authority activities) and those within (i.e. urban, industrial and tourist development, and environmental

conservation) cannot be integrated. In its present form in the UK CZM is nothing more than 'planning with a coastal location' and the conservation management of the shoreline.

The second aim is to assess the potential for effective integration of coastal management organised through a local 'enabling' authority. Focusing CZM at the local authority level conforms with current planning theories and allows those authorities responsible for the development of coastal initiatives to exploit models of organisational theory and decision-making in the development and implementation of local plans. It has also enabled the government to avoid responsibility for producing an adequate integrated policy framework for the coastal zone that includes reforming the sectoral and *ad hoc* management of offshore development. Without a central government lead, however, CZM initiatives have become enmeshed in local political, economic and commercial issues that have restricted local authorities' ability to achieve effective integration of coastal management. The experience has often been one that focuses on how to resolve inter-agency power struggles and decisions to settle immediate, politically motivated conflicts, rather than addressing long-term, socio-economically based conflicts concerning how best to utilise coastal resources. For example, the successful development and implementation of the Wash Estuary Management Plan has effectively been held to ransom by the agricultural community. Consequently, local authority initiatives will almost inevitably fail because from the perspective of one sector it will be difficult to make efficient compromises (trade-offs) that best utilise coastal resources.

A potentially simple solution would have been to extend the statutory planning system into the marine environment in order to achieve the principles of sustainable development, integrated planning and holistic management. Crucially, the refusal to extend statutory planning into inshore waters and the government's defence of the sectoral management of marine issues, reinforces the solely economic consideration of marine development (especially where the competent authority is often the DTi). Rather than adopting a national coastal policy, a plethora of guidelines have been given to local authorities adding to the confusion of plans operating in the coastal zone. In addition, the DoE emphasises that plans developed by local consortia need to be consistent with, and provide input into, statutory development plans under the Town and Country

Planning Act 1990 (DoE, 1992b). Land-use planning, however, formalises the separation between nature and abstract space through written codes of legal statute and professional conduct that imposes a site-based rather than system-based narrative structure on its treatment of the environment (Whatmore and Boucher, 1993). This narrative structure reinforces the strategic representation of nature as a series of discrete parcels and elements, rather than as an integrative system of relationships. The biophysical coastal processes are thus fragmented and marginalised in the evolution of planning procedures better suited to discriminating between particular environmental features. In effect, implementing CZM through the statutory planning system will fail to integrate economic and environmental planning or consider land-use and marine issues in an integrated fashion, given that it currently fails to consider coastal issues in this way. Crucially, the government's refusal to extend the statutory planning beyond the low water mark effectively excludes all marine issues from being integrated into the planning system (including any CZM initiative), which severely limits whatever might be achieved. This is in direct contrast to the Dutch approach that sought to rationalise the planning and management of the coastal waters of the Voordelta and then integrate those plans with the land-use planning system across the low water mark.

Were the system of government in the UK to be more regionalised as in the Netherlands, it might have facilitated the establishment of integrated coastal management institutions at a regional level that could exercise autonomy from central government in local planning decisions (i.e. fulfilling the role of the local authorities). Relying on existing administrative structures to serve CZM, a system that excludes marine issues from statutory planning consideration, the government has failed to promote the integration of coastal planning, particularly across the low water mark. The framework for CZM in the UK, and the discussions surrounding its development, strongly reflect the Conservative government's commitment to reducing the level of interference with market forces and the influence of the planning system (Chapter 3). The decision promotes CZM as a non-statutory, local authority led initiative therefore reflects a 'political' decision to limit the lobbying influence of local authorities by making them responsible for planning across the coastal zone without altering the jurisdictional boundaries. Plans will always be compromised by the local authorities' inability to plan offshore by effectively extending the land-use planning system beyond

the low water mark. By having to rely on the co-operation of central government departments, QUANGOs, and other industrial partners, the government has ensured that conservation interests will not interfere with economic interests operating in the coastal zone through any CZM system.

Considering the failings of the UK's current coastal planning system, identified by the Environment Select Committee in 1992 and presently unresolved, a radical institutional resolution will be required to widen access to influencing the planning system and make its operations more reliable. It will be required to limit the unfettered discretion of central government, encourage more effective spatial co-ordination, and balance economic considerations with social and environmental ones. Without such reform, CZM in the UK will increasingly become 'sponsored' by industrial interests that can afford to bankroll the implementation of management plan initiatives. It will be in the commercial interests of coastal industrial users to back locally developed CZM because it provides the opportunity to negotiate the development and use of the coast to their own advantage, and any environmental action taken can be promoted as the 'greening' of otherwise deleterious uses. Consequently, CZM will only occur on the largest estuaries with the greatest development pressures, and in a form that is unlikely to fulfil the aims of CZM to integrate environmental and economic uses of the coast to pursue sustainable development. Rather, conservation legislation and designations will remain on the periphery of planning unable to protect areas like the Wash from incremental environmental damage and habitat loss. Otherwise, the current system will continue to prevent CZM being carried out around the UK's coast because of the lack of an integrating management mechanism for coastal waters.

7.4.5 Further CZM Research.

While the conclusions of this thesis are critical of the approach taken by the UK government in promoting CZM, research and development of management planning continues, and on an increasingly international scale. Key to the further development of CZM in the UK is the EU Demonstration Programme on Integrated Coastal Zone Management, announced in August 1995. This initiative incorporates 35 projects that

represent a range of Community coasts, which will promote better integration of policies and action, and aims to secure coverage at local, regional and transnational levels. Funding for the project has been sourced from a variety of EU budgets including the LIFE programme that gives grants for innovative environmental schemes, the TERRA spatial planning programme, and INTERREG IIC that considers transnational co-operation (DoE, 1997).

In addition to transnational research on CZM, the European LIFE programme is also promoting the development of Special Areas of Conservation (SACs) under the Habitats Directive, which has become the major conservation focus in coastal and marine environments. The DoE is keen that management should be built on existing mechanisms where possible, including consensus-led projects such as the Wash Estuary Management Plan. English Nature considers the implementation the Habitats Directive as one of the biggest challenges in coastal management, which will only succeed if many different parties are able to work collectively (Gilliand and Francis, 1997). The interest in the implementation of the Habitats Directive with respect to CZM is that the designation of marine SACs will compel the government to involve itself in the management of coastal waters, albeit for very narrow objectives. The UK government's response has been to devolve the management of marine SACs to 'relevant and competent' authorities, demonstrating a persistent reluctance to deal with the management of coastal waters. English Nature has realised the potential of SACs to contribute to CZM, but this is unlikely to be realised should the government's position remain unchanged.

Whether it is the creation and implementation of CZM plans or simply conservation management plan research at European, national and academic levels must now focus on the challenge of achieving the implementation of plans that accomplish holistic and sustainable management planning at the coast. The government will also have to demonstrate a greater commitment to the system than it has in the past, by financing and placing the planning and management of the coastal zone at the heart of the statutory planning system rather than at its edge. The Dutch system illustrates a successful approach with a government agency responsible for all planning issues in coastal waters. This has made CZM a more straightforward exercise, although their arrangements for

governance of local coastal zones have encountered local opposition. Unfortunately, the opportunity to develop such a system in the UK was missed with the rejection of Steers' recommendations in the 1940s, and so it is unlikely that coastal zone issues will ever be regarded as a primary central government planning concern.

Chapter Eight: References.

8.1 References.

8.1 Primary Sources.

8.1.1 International Agency Policy Documents.

Commission of the European Communities, (1991) *Europe 2000: Outlook for the Development of the Community's Territory: Communication to the Council and European Parliament*, CEC, Brussels, 208pp.

Commission of the European Communities (1995) Communication of the Commission to Council and the European Parliament on the Integrated Management of Coastal Zones. COM(95)511 final 31 October 1995.

Commission of the European Communities,(1997) *Better Management of Coastal Resources. A European Programme for Integrated Coastal Zone Management*, CEC, Brussels, 47pp.

Commission of the European Communities, (1988)
http://europa.eu.int/en/comm/dg11/iczm

ENVIREG. Commission of the European Communities, (1994) *Economic Development and Environmental Protection in Coastal Areas. A Guide to Good Practice*, AMBER, ECOTEC Research and Consulting Ltd., Brussels, 60pp.

European Commission, (1993) *Towards Sustainability. Fifth Environmental Action Programme*, COM(92)23, 27 March 1993.

Goldberg, E. D., (1994) *Coastal Zone Space - Prelude to Conflict?* UNESCO, Paris.

Inter-Governmental Panel of Climate Change, (1990) *Strategies for Adaptation to Sea Level Rise. Report of the Coastal Zone Management Subgroup Inter-Governmental Panel of Climate Change Response Strategies Working Group*, Rijkswaterstaat, The Hague.

Intergovernmental Panel on Climate Change, (1992) *Global Climate Change and the Rising Challenge of the Sea*, Report of the Response Strategies Working Group, Coastal Zone Management Subgroup, Directorate General Rijkswaterstaat, The Hague, 127pp.

Intergovernmental Panel on Climate Change, (1994) *Preparing to Meet the Coastal Challenges of the 21st Century. Conference Report World Coast Conference 1993*, Ministry of Transport, Water Management and Public Works, The Hague.

Organisation for Economic Co-operation and Development, (1993) *Coastal Zone Management. Integrated Policies*, OECD, Paris, 128pp.

United Nations Convention on Environment and Development, (1992) *The Earth Summit 1992*, Regency Press, London.

United Nations, (1971) *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*, Ramsar, Iran.

United Nations, (1983) *The Law of the Sea. Official Text of the United Nations Convention on the Law of the Sea*, United Nations, New York, 224pp.

8.1.2 UK National Government Policy Documents.

Department of the Environment, (1992a) *Coastal Zone Protection and Planning. Government Response to the Second Report of the House of Commons Environment Select Committee, Session 1991-92*, Cm 2011, July, HMSO, London.

Department of the Environment, (1992b) *Planning Policy Guidance Note 20: Coastal Planning*, HMSO, London, 22pp.

Department of the Environment, (1993a) *The UK Strategy For Sustainable Development Consultation Paper*, HMSO, London.

Department of the Environment, (1993b) *Coastal Planning and Management: A Review*, HMSO, London, 178pp.

Department of the Environment, (1 November 1996) Press Release *Government Publishes Coastal Zone Management - Towards Best Practice* (http://www.coi.gov.uk).

Department of the Environment, (1996) *Coastal Zone Management Towards Best Practice*, HMSO, London, 81pp.

Department of the Environment (1995; 1996; 1997) *Wavelength* (Newsletter of the Coastal Forum).

Department of the Environment/Welsh Office, (1972) *The Planning of the Undeveloped Coast*, Circular 12/72, HMSO, London. Also cited as Department of the Environment and Welsh Office (1972) Circular 36/72.

Department of the Environment/Welsh Office, (1993a) *Development Below Low Water Mark. A Review of Regulation in England and Wales*, Department of the Environment/Welsh Office, Bristol.

Department of the Environment/Welsh Office, (1993b) *Managing the Coast. A Review of Coastal Management Plans in England and Wales and the Powers Supporting Them* Department of the Environment/Welsh Office, Bristol.

Department of the Environment/Welsh Office, (1995) *Policy Guidelines for the Coast*, HMSO, London, 65pp.

Hansard 1937, House of Commons, 320, 10 February, pp. 419-81.

House of Commons Select Committee on the Environment, (Session 1991-2) *Coastal Zone Protection and Planning, Volume 1*, HMSO, London.

Ministry of Agriculture Fisheries and Food, (1992a) *Coastal Defence and the Environment - A Good Practice Guide*, HMSO, London.

Ministry of Agriculture Fisheries and Food, (1992b) *Coastal Defence and the Environment - A Strategic Guide For Managers and Decision Makers in the National Rivers Authority, Local Authorities and Other Bodies With Coastal Responsibilities*, HMSO, London.

Ministry of Housing and Local Government, (1966) *The Coast*, Circular 7/66, HMSO, London.

Public Record Office, HLG 52, 550; HLG 52, 553; HLG 71, 772.

Scottish Office, (1993) *Guidance on the Location of Marine Fish Farms*, HMSO, London.

8.1.3. UK Local Authority and QUANGO Policy Documents.

Davidson, N. C., d'A Laffoley, D., Doody, J. P., Way, L. S., Gordon, J., Key, R., Drake, C. M., Pienkowski, M. W., Mitchell, R., and Duff, K. L., (1991) *Nature Conservation and Estuaries in Great Britain*, Nature Conservancy Council, Peterborough, 422pp.

Doody, J. P., Johnston, C., and Smith, B., (Eds.) (1992) *Directory of the North Sea Margin*, Joint Nature Conservation Committee, Peterborough, 419pp.

English Nature, (1992) *Caring For England's Estuaries. An Agenda For Action. Campaign For A living Coast*, Peterborough, England, 15pp.

English Nature, (1994) *Campaign For A Living Coast Important Areas For Marine Wildlife Around England*, Peterborough, Cambridgeshire.

Humber Estuary Management Strategy, 1997 *Humber Estuary Management Strategy*, 51pp.

Lincolnshire County Council, (1982) *Development On The Lincolnshire Coast: Subject Plan*, Lincolnshire County Council, Lincoln.

Northumberland County Council, (1993) *Northumberland Coast Management Plan*, Planning and Environment Division of Technical Services Directorate, Northumberland County Council, Morpeth, 81pp.

Wash Estuary Strategy Group, (1994) *The Wash Estuary Management Plan Consultation Draft*, Norfolk County Council and Lincolnshire County Council, 95pp.

Wash Estuary Strategy Group, (1995) *The Wash Estuary Management Plan: Consultation Draft. Analysis of Consultation Response and Proposals*, Norfolk County Council and Lincolnshire County Council, 110pp.

Wash Estuary Strategy Group, (1996) *The Wash Estuary Strategy For Sustainable Management*, Norfolk County Council and Lincolnshire County Council, 10pp.

8.1.4 The Netherlands National Policy Documents.

Alphen, J. S. L. J., van, (1995) *The Voordelta Integrated Policy Plan: Administrative Aspects of Coastal Zone Management in the Netherlands*, internal Rijkswaterstaat report.

Association of Water Boards, (1992) *Water Boards*, The Association of Water Boards (*Unie van Waterschappen*), The Hague, 16pp.

Brussard, W., (1987) *The Rules of Physical Planning 1986*, Ministry of Housing, Physical Planning and Environment, 51pp.

Hallie, F. P., (1995) *Sand Mining for the Benefit of Coastal Nourishment*, Report to the Rijkswaterstaat North Sea Directorate, The Hague.

Heer, J. M., de, (1993) *Proces Evaluatie Beleidsplan Voordelta*, PRC Management Consultants, Bodegraven, The Netherlands, 44pp.

Interdepartmental Co-ordinating Committee for North Sea Affairs, (1992) *North Sea Atlas For Netherlands Policy and Management*, ICONA, The Hague, 195pp.

Ministry of Foreign Affairs, (1985) *Compact Geography of the Netherlands*, The Hague, 43pp.

Ministry of Housing, Physical Planning and the Environment, (1992) *Fourth Report (EXTRA) On Physical Planning in the Netherlands. Comprehensive Summary. On the Road to 2015*, Ministry of Housing, Physical Planning and the Environment, The Hague, 37pp.

Ministry of Transport, Water Management and Public Works, (1989) *Water in the Netherlands: A Time For Action. Summary of the National Policy Document on Water Management*, Ministry of Transport, Water Management and Public Works, The Hague, 68pp.

Ministry of Transport, Water Management and Public Works, (1990a) *The Delta Project. Preserving The Environment and Securing Zeeland Against Flooding*, Ministry of Transport and Public Works Information Division, The Hague, 32pp.

Ministry of Transport, Water Management and Public Works, (1990b) *A New Coastal Defence Policy for the Netherlands*, Ministry of Transport, Water Management and Public Works Tidal Waters Division (*Rijkswaterstaat*), The Hague, 103pp.

Ministry of Transport, Water Management and Public Works, (1993) *Vorm in Verandering, Integraal Beleidsplan Voordelta*, Rijkswaterstaat directie Noordzee, Rijkswijk, 75pp.

8.2 Secondary Sources.

8.2.1 Coastal Zone Management: Theoretical Principles.

Aurrocoechea, I., and Pethick, J. S., (1986) *The Coastline: its Physical and Legal Definition*, International Journal and Estuarine and Coastal Law, 1(1), pp. 29-42.

Barcena, A., (1992) *UNCED and Ocean and Coastal Management*, Ocean and Coastal Management, 18, pp. 15-53.

Bijlsma, J. W. J., Breuer, R. E. H., Jansen, H. G., Posthuma, H., Roovaart, J. C., van den, Schooten, P., van, and Verhoeve, B., (1991) *European Coastal Management, Universitaire Beroepsopleiding Milieukunde Report No. 1991/2*, Leiden University.

Brinkhorst, L. J., (1991) *Prospects for a Community Strategy*, Naturopa, 67.

CAMPNET, (1989) *The Status of Integrated Coastal Zone Management: A Global Assessment.* Summary Report of a Workshop Convened at Charlestown, South Carolina. July 4-9, 1989. Rosentheil School of Marine Sciences. University of Miami.

Carter, R. W. G., (1989) *Coastal Environments. An Introduction to the Physical, Ecological and Cultural Systems* (2nd Edition) Academic Press, London, 617pp.

Cendrero, A., (1989) *Land Use Problems, Planning and Management in the Coastal Zone: An Introduction*, Ocean and Shoreline Management, 12, pp. 367-381.

Charlier, R. H., (1989) *Coastal Zone: Occupance, Management and Economic Competitiveness*, Ocean and Shoreline Management, 12, pp. 383-402.

Charlier, R. H., and Charlier, C. C. P., (1995) *Sustainable Multiple Use and Management of the Coastal Zone*, Environmental Management and Health, 6(1), pp. 14-24.

Charlier, R. H., and Vigneaux, M., (1986) *Ocean Utilization and Economic Conflicts in the Coastal Zone (Part 2)*, International Journal of Environmental Studies, 26, 271-278.

Chua, T-E., (1993) *Essential Elements of Integrated Coastal Zone Management*, Ocean and Coastal Management, 21, pp. 81-108.

Churchill, R. R., and Lowe, A. V., (1988) *The Law of the Sea*, (2nd Edition), Manchester University Press, Manchester, 370pp.

Cicin-Sain, B., (1993) *Sustainable Development and Integrated Coastal Management*, Ocean and Coastal Management, 21, pp. 11-43.

Dahl, A. L., (1993) *Land Based Pollution and Integrated Coastal Management*, Marine Policy, November, pp. 561-573.

Doody, J. P., (1995) *Information and Coastal Zone Management: The Final Frontier*, in M. G. Healy and J. P. Doody (Eds.) "Directions in European Coastal Management", Samara Publishing, Cardigan, pp. 399-414.

Doornkamp, J. C., (1992) *Overseas Responses Through Legislation and Policy to Coastal Problems*, in M. G. Barratt (Ed.) "Coastal Zone Planning and Management", Thomas Telford, London, pp. 161-178.

Englander, E., Feldman, J., and Hershman, M., (1977) *Coastal Zone Problems: A Basis for Evaluation*, Coastal Zone Management Journal, 3, pp. 217-236.

European Community Workshop, (1991) "Coastal Zone Management", held at Poole Harbour from 21-27 April 1991, Marine Conservation Society.

French, P, W., (1997) *Coastal and Estuarine Management*, Routledge, London, 251pp.

GESAMP, (1990) *The State of the Marine Environment*, Blackwell Scientific, Oxford.

Gilliand, P., and Francis, C., (1997) *The Basic Framework*, CoastNET (The Bulletin of the Coastal Heritage Network), Coastal Heritage Network, Manchester, 2(2), pp. 4.

Gubbay, S., (1989) *Coastal Sea Use and Management. A Review of Approaches and Techniques*, A Report for the World Wide Fund for Nature from the Marine Conservation Society, 65pp.

Gubbay, S., (1989a) *Viewpoint: Setting the Planning Agenda for the 1990s: Coastal Zone Planning and Management*, Town Planning Review, 60(4), pp. v-vi.

Hildebrand, L. P., and Norrena, E. J., (1992) *Approaches and Progress Towards Effective Integrated Coastal Zone Management*, Marine Pollution Bulletin, 25(1-4) pp. 94-97.

Huggett, D., (1995) *The Role of the Birds Directive and the Habitats and Species Directive in Delivering Integrated Coastal Zone Planning and Management*, in M. G. Healy and J. P. Doody (Eds.) "Directions in European Coastal Management", Samara Publishing, Cardigan, pp. 9-18.

Hugget, D., CoastNet (Spring) 3(1), pp. 3.

Jones, V., and Westmacott, S., (Eds.) (1993) *Management Arrangements for the Development and Implementation of Coastal Zone Management Programmes*, World Coast Conference 1993, International Conference on Coastal Zone Management, Ministry of Transport, Public Works and Water Management, The Hague, 100pp.

Julien, B., (1996) *Integrated Management of the European Coastal Zone*, in P. S. Jones, M. G. Healy, and A. T. Williams (Eds.) "Studies in European Coastal Management", Samara Publishing, Cardigan, pp. 5-22.

Kenchington, R., and Crawford, D., (1993) *On The Meaning of Integration in Coastal Zone Management*, Ocean and Coastal Management, 21, pp. 109-127.

Lowe, A. V., (1986) *Reflections on the Waters. Changing Conceptions of Property Rights in the Law of the Sea*, International Journal of Estuarine and Coastal Law, 1(1), pp. 1-14.

Miles, L. E., (1992) *Future Challenges in Ocean Management: Towards Integrated National Ocean Policy*, in: P. Fabbri (Ed.) "Ocean Management in Global Change", Elsevier Applied Science, London, pp. 280-307.

Mullard, S., (1995) *Towards an EU Strategy for Integrated Coastal Zone Management*, European Environmental Law Review, January, pp. 16-20.

Pickering, H., (1994) *Practical Coastal Zone Management: Alternatives and Strategies*, Marine Policy, 18(5).

Pravdic, V., (1992) *Strategic Approaches In Coastal Zone Management In Semi-Enclosed Seas. Requirements and Realities: Environmental Protection and Economic Development*, International Journal of Environmental Studies, 42, pp. 115-122.

Scura, L. F., Chua, T-E, Pido, M. D., and Paw, J. N., (1992) *Lessons From Integrated Coastal Zone Management: the ASEAN Experience*, in: T-E Chua and L. F. Scura. ICLARM Conference. Proceedings. 37, pp. 1-68.

Seabrooke, W., and Pickering, H., (1994) *The Extension of Property Rights to the Coastal Zone*, Journal of Environmental Management, 42, pp. 161-179.

Sidaway, R., (1995) *Recreation and Tourism on the Coast: Managing Impacts and Resolving Conflicts*, in M. G. Healy and J. P. Doody (Eds.) "Directions in European Coastal Management", Samara Publishing, Cardigan, pp. 71-78.

Smith, H. D. and Lalwani, I., (1992) *The Future Development of Sea Use Management In Europe*, Ocean and Coastal Management, 18, pp. 187-196.

Sorensen, J., (1993) *The International Proliferation of Integrated Coastal Zone Management Efforts*, Ocean and Coastal Management, 21, pp. 45-80.

Steeley, G., (1994) *Draft Proposition for a Green Paper on the Planning and Management of Coastal Zones*, Council of European Municipalities and Regions.

Steers, J. A., (1944) *Coastal Preservation and Planning*, The Geographical Journal, CIV, pp. 7-27.

Stoker, G., (1993) *Coastal Zone Protection and Planning*, Journal of Planning and Environmental Law, June, pp. 521-526.

Masters, D., (1995) *Action Centred Networks: The Key to Decision Making in Coastal Zone Management*, in M. G. Healy and J. P. Doody (Eds.) "Directions in European Coastal Management", Samara Publishing, Cardigan, pp. 391-398.

Underdal, A., (1980) *Integrated Marine Policy. Why? Why? How?* Marine Policy, July, pp. 159-169.

Vallega, A., (1993) *A Conceptual Approach to Integrated Coastal Management*, Ocean and Coastal Management, 21, pp. 149-162.

Vallejo, S. M., (1993) *The Integration of Coastal Zone Management into National Development Planning*, Ocean and Coastal Management, 21, pp. 163-182.

World Coast Conference, (1993) *Preparing To Meet The Coastal Challenge Of The 21st Century, Conference Report.* Noordwijk, The Netherlands, 1-5 November 1993.

Zetter, J., (1992) *Coastal Planning: Recent Policy Development* in M. Barratt, (Ed.) "Coastal Zone Planning and Management", pp. 145-152.

8.2.2 Coastal Zone Management: Examples of National Practice.

Alphen, J. S. L. J., van, and Hoozemans, F. M. J., (1991) *Coastal Zone Management In A Changing Morphological Environment: A Case Study From The Netherlands*, in O. T. Magoon, H. Converse, V. Tippie, L. T. Tobin and D. Clark (Eds.), Coastal Zone '91, Proceedings of the 7th Symposium on Ocean and Coastal Management, American Society of Civil Engineers, held in New Orleans, Louisiana, pp. 2720-2733.

Earll, R., (1994) *UK Government Publishes its Views on Coastal Zone Management*, Marine Pollution Bulletin, 28(1), pp. 5-6.

Fischer, D. W., (1990) *Governing The US Coastal Zone: An Unresolved Issue*, Ocean and Shoreline Management, 13.

Godschalk, D. R., (1992) *Implementing Coastal Zone Management: 1972-1990*, Coastal Management, 20, pp. 93-116.

Gubbay, S., (1990) *A Future for the Coast? Proposals for a UK Coastal Zone Management Plan*, Marine Conservation Society/World Wide Fund for Nature, London.

Gubbay, S., (1991a) *A Definition of the Coastal Zone for the United Kingdom*, Coastal Management Programmes Discussion Paper CZM/1, Marine Conservation Society and World Wide Fund for Nature, Godalming.

Gubbay, S., (1991b) *Coastal Zone Management in the UK, Marine Update. A Quarterly Newsletter to Highlight WWF's Work in Marine Conservation*, World Wide Fund for Nature, Godalming.

Gubbay, S., and Laffoley, D., (1996) *Improving Integration and Communication of Coastal Zone Management: A Case Study for the Solent Region, UK*, in M. G. Healy, and J. P. Doody, (Eds.), "Directions in European Coastal Management", Samara Publishing Ltd., Cardigan, 556pp, (pp. 57-62).

Halliday, J. E., (1987) *Coastal Planning and Management in England and Wales: The Contribution of District Councils*, Town Planning Review, 58(3), pp. 317-329.

Halliday, J. E., (1988) *Coastal Planning and Management: The Role of the County Councils in England and Wales*, Ocean and Shoreline Management, 11, pp. 211-230.

Hildreth, R. G., (1992) *Australian Coastal Management: Some North American Perspectives on Recent Queensland and Other Initiatives*, Coastal Management, 20, pp. 255-268.

Hillen, R., and Haan, Tj., de, (1993) *Development and Implementation of the Coastal Defence Policy for the Netherlands*, in R. Hillen, and H. J. Verhagen, (Eds.), "Coastlines of the Southern North Sea", Proceedings of Coastal Zone '93, The Eighth Symposium On Coastal And Ocean Management, American Society of Civil Engineers, held in New Orleans, Louisiana, July 19-23 1993, 363pp, (pp. 188-201).

Hillen, R., and Roelse, P., (1995) *Dynamic Preservation of the Coastline in the Netherlands*, Journal of Coastal Conservation, 1, pp. 17-27.

Holgate-Pollard, D., (1996) *Coastal Zone Management in England: The Policy Context* in Jones, P. S., Healy, M. G., and Williams, A. T., (Eds.) "Studies in European Coastal Management", Samara Publishing Ltd., Cardigan, pp. 29-33.

Hoorne, H., van, Peet, G., and Wieriks, K., (1985) *Harmonizing North Sea Policy in the Netherlands*, Marine Policy, 9(1), pp. 53-61.

Housden, J., (1993) *Review Forum: Seas, Coasts and Planning*, in D. W. M., Town Planning Review, 64(2), p. 216.

Howarth, W., (1992) *Integrated Regulation of the Coastal Zone in the UK*, Marine Pollution Bulletin, 24(9), pp. 430-432.

Jackson, M. E., and O'Donnell, M., (1993) *Responsible Government Structures: Coastal Management in the United States, Great Britain, and Australia*, Coastal Zone '93, pp. 773-790.

Jelgersma, S., (1992) *Vulnerability of the Coastal Lowlands of the Netherlands to a Future Sea-Level Rise*, in M. J. Tooley, and S. Jelgersma (Eds.) "Impacts of Sea-Level Rise on European Coastal Lowlands", Blackwell, Oxford, 267pp.Koekebakker, P., and Peet, G., (1987) *Coastal Zone Planning and Management in the Netherlands*, Coastal Management, 15, pp. 121-134.

Knecht, R. W., and Archer, J., (1993) *'Integration' in the US Coastal Zone Management Program*, Ocean and Coastal Management, 21, pp. 183-199.

Lee, E. M., (1993) *Coastal Planning and Management. A Review*, Department of the Environment, HMSO, London, 178pp.

Lee, E. M., (1993b) *The Political Ecology of Coastal Planning and Management in England and Wales: Policy Responses to the Implications of Sea Level Rise*, The Geographical Journal, 159(2), pp. 169-178.

Louisse, C. J., and Meulen, F., van der, (1991) *Future Coastal Defence in the Netherlands: Strategies for Protection and Sustainable Development*, Journal of Coastal Research, 7(4), pp. 1027-1041.

Meur-Férec, C., (1997) *A Comparative Analysis of Coastal Conservation Policies in France, and England and Wales*, Journal of Coastal Conservation, 3, pp. 121-132.

Mitchell, J. K., (1982) *Coastal Zone Management: A Comparative Analysis of National Programs*, in E. M., Borgese and N., Guisberg (Eds.), Ocean Yearbook, 3, pp. 259-319.

Nordberg, L., (1995) *Coastal Conservation in Selected European States*, in M. G. Healy and J. P. Doody (Eds.) "Directions in European Coastal Management", Samara Publishing, Cardigan, pp. 47-50.

Ruig, J. H. M., de (1997) *Resilience in Dutch Coastline Management*, Coastline, 2, European Union of Coastal Conservation, Leiden.

Ruig, J. H. M., de, (1995) *The Dutch Experience: Four Years of Dynamic Preservation of the Coastline*, in M. G. Healy, and J. P. Doody, (Eds.), "Directions in European Coastal Management", Samara Publishing Ltd., Cardigan, 556pp, (pp. 253-266).

Ruig, J. H. M., de, and Hillen, R., (1997) *Developments in Dutch Coastal Management: Conclusions from the Second Governmental Coastal Report*, Journal of Coastal Conservation, 3, pp. 203-210.Verhagen, H. J., (1991) *Coastal Maintenance. The Netherlands*, in O. T. Magoon, H. Converse, V. Tippie, L. T. Tobin and D. Clark (Eds.), Coastal Zone '91, Proceedings of the 7th Symposium on Ocean and Coastal Management, American Society of Civil Engineers, held in New Orleans, Louisiana, 1991, pp. 2734-2743.

Sheail, J., (1976) *Coasts and Planning in Great Britain Before 1950*, The Geographical Journal, 142 (July), pp. 257-273.

Smith, H., (1991) *The Present and Future of Coastal Zone Management in the UK*, Land Use Policy, April, pp. 125-132.

Southgate, M., (1994) *Development Below Low Water Mark. A Review of Regulation in England and Wales. Comments on the DoE/Welsh Office Consultation Paper*, Royal Society for the Protection of Birds, Sandy, Bedfordshire, 37pp.

Wiggerts, H., and Koekebakker, P., (1982) *Coastal Planning and Management in the Netherlands*, Ekstikis, 49(293), pp. 143-149.

Williams, A. T., (1987) *Coastal Conservation Policy Development in England and Wales with Special Reference to the Heritage Coast Concept*, Journal of Coastal Research, 3(1), pp. 99-106.

8.2.3 Planning Theory.

Castells, M., (1977) *The Urban Question: A Marxist Approach*, Edward Arnold, London.

Cochrane, A., (1989) *Restructuring the State: The Case of Local Government*, in A. Cochrane and J. Anderson, (Eds.) "Politics in Transition", Sage, London, pp. 95-140.

Cochrane, A., (1991) *The Changing State of Local Government: Restructuring for the 1990s*, Public Administration, 69, pp. 281-302.

Davidoff, P., and Reiner, T., (1962) *A Choice Theory Of Planning*, Journal of American Institute of Planners, 28(3), pp. 103-115.

Faludi, A., (1982) *Three Paradigms of Planning Theory*, in P. Healey, G. McDougall and M. J. Thomas, (Eds.) "Planning Theory: Prospects for the 1980s", Pergamon Press, Oxford, (pp. 81-101).

Friedmann, J., (1987) *Planning in the Public Domain*, Princeton University Press, Princeton, NJ.

Goodwin, M., and Painter, J., (1996) *Local Governance, the Crisis of Fordism and the Changing Geographies of Regulation*, Transactions of the Institute of British Geographers, 21, pp. 635-648.

Greed, C., (1993) *Introducing Town Planning*, Longman Scientific & Technical, Harlow, 238pp.

Habermas, J., (1987) *The Philosophical Discourse of Modernity*, Polity Press, Cambridge.

Harvey, D., (1973) *Social Justice and the City*, Edward Arnold, London.

Hayek, F. A., (1944) *The Road to Serfdom*, Chicago University Press.

Healey, P., (1992) *Planning Through Debate. The Communicative Turn In Planning Theory*, Town Planning Review, 63(2), pp. 143-162.

Hudson, B., (1979) *Comparative and Current Planning Theories: Counterparts and Contradictions*, Journal of the American Planning Association, 45(4), pp. 387-398.

Kirk, G., (1980) *Urban Planning in a Capitalist Society*, Croom Helm, London.

Klosterman, R. E., (1985) *Arguments For and Against Planning*, Town Planning Review, 56(1), pp. 5-20.

Lichfield, N., and Darin-Drabkin, H., (1980) *Land Use Policy and Planning*, George Allen & Unwin, London, 321pp.

Low, N., (1991) *Planning, Politics and the State. Political Foundations of Planning Thought*, Unwin Hyman, London, 313pp.

Mannheim, K., (1940) *Man and Society in an Age of Reconstruction*, Routledge and Kegan Paul, Henley-on-Thames.

Mannheim, K., (1944) *Man and Society in an Age of Reconstruction: Studies in Modern Social Structure*, Harcourt Brace and World, New York.

Meyerson, M., and Banfield, E. C., (1957) *Politics, Planning and the Public Interest*, The Free Press, Glencoe.

Minford, P., (1988) *How to De-Politicise Local Government*, Economic Affairs, 9(1), pp. 12-16.

Poulton M. C., and Begg, H. M., (1988) *Public Choice and a Positive Theory of Planning*, The Planner, 74(7), pp. 15-17.

Poulton, M. C., (1991) *The Case for a Positive Theory of Planning. Part 1: What is Wrong With Planning Theory?*, Environmental and Planning B: Planning and Design, 18(2), pp. 225-232.

Ravetz, A., (1980) *Remaking Cities: Contradictions of the Recent Urban Environment*, Croom Helm, London.

Sabatier, P. A., (1986) *Top-Down and Bottom-Up Approaches to Implementation Research: A Critical Analysis and Suggested Synthesis*, Journal of Public Policy, 6(1), pp. 21-48.

Sabatier, P. A., (1987) *Knowledge, Policy Oriented Learning, and Policy Change*, Knowledge: Creation, Diffusion, Utilisation, 8(4), pp. 649-692.

Sagasti, F., (1988) *National Development Planning In Turbulent Times: New Approaches and Criteria for Institutional Design*, World Development, 16(4), pp. 431-448.

Sorensen, A. D., (1982) *Planning Comes of Age: A Liberal Perspective*, The Planner, 68(6), pp. 184-188.

Sorensen, A. D., (1983) *Towards a Market Theory of Planning*, The Planner, 69(3), pp. 78-80.

Sorensen, A., D., and Day, R. A., (1981) *Libertarian Planning*, Town Planning Review, 52(4), pp. 390-402.

Stoker, G., (1988) *The Politics of Local Government*, Macmillan, London.

Stoker, G., (1995) *Intergovernmental Relations*, Public Administration, 73, pp. 101-122.

Tugwell, R. G., (1940) *Implementing the General Interest*, Public Administration Review, 1(1), pp. 32-49.

von Mises, L., (1952) *Planning For Freedom and Other Essays*, Libertarian Press, South Holland, Illinois.

Wootton, B., (1944) *Freedom Under Planning*, University of North Carolina Press, Chapel Hill.

Yiftachel, D., (1989) *Towards a New Typology of Urban Planning Theories*, Environmental and Planning B: Planning and Design, 16(1), pp. 23-29.

8.2.4 Local Government Planning Practice in the Netherlands.

Davies, H. W. E., (1988) *The Control of Development in the Netherlands*, Town Planning Review, 59(2), pp. 207-225.

Dutt, A. K., and Costa, F. J., (Eds.) (1985) *Public Planning in the Netherlands. Perspectives and Change Since the Second World War*, Oxford University Press, Oxford, 261pp.

Dutt, A. K., and Heal, S., (1985) *The Delta Works: A Dutch Experience in Project Planning*, in A. K. Dutt, and F. J. Costa, (Eds.) "Public Planning in the Netherlands. Perspectives and Change Since the Second World War", Oxford University Press, Oxford, (pp. 184-202).

Faludi, A., and Valk, A. J. van der, (1994) *Rule and Order Dutch Planning in the Twentieth Century*, Kluwer Academic Publishers, Dordrecht, The Netherlands, 313pp.
Maasacker, M. H. J. M., van, and Arentsen, M. J., (1990) *Environmental Policy*, in M. Wolters and P. Coffey, (Eds.), "The Netherlands and EC Membership Evaluated", Pinter Publishers, London, pp. 70-78.

Meijer, E. W., (1993) *The Role of the Physical Planning Key Decision (or PKB) on the Wadden Sea in the Protection of the Dutch Wadden Area*, Dutch Society for the Preservation of the Wadden Sea, Harlingen, paper submitted to the *4th European Union for Coastal Conservation Congress*, Marathon, 11pp.

Needham, B., (1988) *Continuity and Change in Dutch Planning Theory*, The Netherlands Journal of Housing and Environmental Research, 3(3), pp. 5-22.

Nieuwenkamp, J. K., (1985) *National Physical Planning: Origins, Evolution and Current Objectives,* in A. K., Dutt and F. J., Costa, (Eds.), "Public Planning in the Netherlands. Perspectives and Change Since the Second World War", Oxford University Press, Oxford, (pp. 72-81).

Pieters, J. B., (1989) *Dutch Government's Policy*, Perspectives in Coastal Dune Management, pp. 231-238.

Sidaway R., and Voet, H., van der, (1993) *Getting on Speaking Terms: Resolving Conflicts Between Recreation and Nature in Coastal Zone Areas of the Netherlands a*

Literature Study and Case Study Analysis, Rapport nr 26, Werkgroep Recreatie van de Landbouwuniversiteit, Wageningen, Ministerie Landbouw en Visseij, s'Gravenhage.

Toonen, Th. A. J., (1990) *The Unitary State as a System of Co-Governance: The Case of the Netherlands*, Public Administration, 68, pp. 281-296.

8.2.5 Local Government Planning Practice in the UK.

Brindley, T., Rydin, Y., and Stoker, G. (1989) *Remaking Planning. The Politics of Urban Change in the Thatcher Years*, Unwin Hyman, London, 197pp.

Cheshire, P. C., D'Arcy, E., and Guissani, B., (1992) *Purpose Built For Failure? Local, Regional And National Government In Britain*, Environment and Planning C: Government and Policy, 10, pp. 355-369.

Cloke, P., (Ed.) (1992) *Policy Change in Thatcher's Britain*, Pergamon Press, Oxford.

Cochrane, A., (1993) *Whatever Happened to Local Government?* Open University Press, Buckinghamshire.

Cullingworth, J. B., (1990) *Town and Country Planning in Britain* (10th Edition), Routledge, London, 408pp.

Cullingworth, J. B., (1994) *Fifty Years Of Post-War Planning*, Town Planning Review, 65(3), pp. 277-290.

Cullingworth, J. B., and Nadin, V., (1994) *Town and Country Planning* (11th Edition) Routledge, London, 343pp.

Diamond, D. R., (1979) *The Uses of Strategic Planning: The Example of the National Planning Guidelines in Scotland*, Town Planning Review, 50, pp. 18-25.

Elcock, H., (1994) *Local Government: Policy and Management in Local Authorities* (3rd Edition), Routledge, London, 353pp.

Gibson, J., (1977) *Foreshore: A Concept Built on Sand*, Journal of Planning and Environmental Law, pp. 762-770.

Gibson, J., (1993) *Coastal Zone Planning Law. Role of Law in Management of the Coastal Zone in England and Wales*, Marine Policy, (March), pp. 118-129.

Grant, M., (1992) *Planning Law And The British Land Use Planning System*, Town Planning Review, 63(1), pp. 3-12.

Hague, C., (1991) *A Review of Planning Theory in Britain*, Town Planning Review, 62(3), pp. 295-310.

Healey, P., McNemara, P., Elson, M., and Doak, M., (1988) *Land Use Planning And The Mediation Of Urban Change: The British Planning System In Practice*, Cambridge University Press, Cambridge.

Hirst, P., (1989) *The Politics of Industrial Policy*, in P. Hirst and J. Zeitlin (Eds.) "Reversing the Decline? Industrial Structure and Policy in Britain and Her Competitors", Berg, London.

Jordan, A. G., and Richardson, J. J., (1987) *Government and Pressure Groups in Britain*, Clarendon, Oxford.

Leys, C., (1989) *Politics in Britain. From Labourism to Thatcherism*, Verso, London.

Reade, E., (1987) *British Town and Country Planning*, Open University Press, Milton Keynes.

Ridley, N., (1988) *The Local Right: Enabling Not Providing*, Centre for Policy Studies, London.

Rydin, Y., (Ed.) (1993) *The British Planning System. An Introduction*, Macmillan, Basingstoke, 404pp.

Stoker, G., (1989) *Creating a Local Government for a Post-Fordist Society: The Thatcherite Project?*, in J. Stewart and G. Stoker, (Eds.) "The Future of Local Government", Macmillan, Basingstoke.

Tewdwr-Jones, M., (1994a) *The Government's Planning Policy Guidance*, Journal of Planning and Environmental Law, February, pp. 106-116.

Tewdwr-Jones, M., (1994b) *Policy Implications of the Plan-Led Planning System*, Journal of Planning and Environmental Law, July, pp. 584-593.

Tewdwr-Jones, M., (1996) *Introduction: Land-Use Planning Policy After Thatcher*, in M. Tewdwr-Jones, (Ed.) "British Planning Policy In Transition. Planning In The 1990s", UCL Press, London, pp. 1-14.

Thornley, A., (1991) *Urban Planning Under Thatcherism*, Routledge, London.

8.2.6 Environmental Planning and Management Theory and Practice.

Bishop, J., (1994) *Planning for Better Rural Design*, Planning Practice and Research, 9, pp. 259-270.

Boehmer-Christiansen, S., (1994) *Policy and Practice Reviews. Politics and Environmental Management*, Journal of Environmental Planning and Management, 37(1), pp. 69-85.

Carley, M., and Christie, I., (1994) *Managing Sustainable Development*, Earthscan, London.

Dix, H. M., (1981) *Environmental Pollution: Atmosphere, Land, Water and Noise*, Wiley, Chichester, 286pp.

Healey, P., and Shaw, T., (1994) *Changing Meanings of 'Environment' In The British Planning System*, Transactions of the Institute of British Geographers New Series, 19, pp. 425-438.

O'Riordan, T., (1995) *Environmental Science for Environmental Management*, Longman Scientific and Technical, Wiley, New York.

Owens, S., (1994) *Land, Limits and Sustainability. A Conceptual Framework and Some Dilemmas For The Planning System*, Transactions of the Institute of British Geographers New Series, 19, pp. 439-456.

Rees, J., (1990) *Natural Resources. Allocation, Economics and Policy* (2nd Edition), Routledge, London, 499pp.

Rothwell, P., (1993) *Review Forum: Seas, Coasts and Planning* in D. W. M., Town Planning Review, 64(2), p. 214.

Taussik, J., (1995) *The Contribution of Development Plans with Particular Reference to Nature Conservation*, in M. G. Healy and J. P. Doody (Eds.) "Directions in European Coastal Management", Samara Publishing, Cardigan, pp. 471-478.

Weale, A., (1994) *The New Politics of Pollution*, Manchester University Press, Manchester.

Whatmore, S., and Boucher, S., (1993) *Bargaining With Nature: The Discourse and Practice of 'Environmental Planning Gain'*, Transactions of the Institute of British Geographers New Series, 18, pp. 166-178.

Williams, C., (1993a) *Planners Carry Capacity for Sustainable Development*, Planning, 1012 (2 April), pp. 18-19.

Williams, C., (1993b) *Pushing Back Policy Barriers to Reduce Unsustainability*, Planning, 1013 (9 April), pp. 18-19.

8.2.7 Organisational Theory

Banner, D. K. and Gagné, T. E., (1995) *Designing Effective Organisations. Traditions and Transformational Views*, Sage, London, 480pp.

Booth, T., (1990) *Researching Policy Research*, Knowledge: Creation, Diffusion, Utilization, 12(1), pp. 80-100.

Brooke, R., (1989) *The Enabling Authority - Practical Consequences*, Local Government Studies, September/October, pp. 55-63.

Campbell, J. C., Baskin, M. A., Baumgater, F. R., and Halpern, N. P., (1989) *Afterword on Policy Communities: A Framework for Comparative Research* Governance, 2, pp. 86-94.

Cawson, A., (1985) *Corporatism and Local Politics*, in W. Grant (Ed.) "The Political Economy of Corporatism", Macmillan, London.

Cyert, R. M., and March, J. C., (1963) *The Behavioural Theory of the Firm*, Prentice Hall, Englewood Cliffs, NJ.

Dahl, R., (1957) *The Concept of Power*, Behavioural Science, 2, pp. 202-203.

Djanberg, C., (1997) *Policy Networks and Agricultural Policy Reforms*, Governance, 10(2), pp. 123-142.

Dunn, W. N., (1983) *Measuring Knowledge Use*, Knowledge and Policy, 4(4), pp. 36-55.

Dunn, W. N., Duckes, M. J., and Cahill, A. G., (1984) *Designing Utilization Research*, Knowledge: Creation, Diffusion, Utilization, 5(3), pp. 387-404.

French, J. P. R., and Raven, B., (1968) *The Basis of Social Power*, in Cartwright, D., and Zander, A., (Eds.) "Group Dynamics" (3rd Edition), Harper Row, New York, pp. 259-269.

Giddens, A., (1984) *The Construction of Society: Introduction to the Theory of Structuration*, Polity Press, Cambridge.

Hall, P., (1993) *Policy Paradigms, Social Learning and the State*, Comparative Politics, 25(3), pp. 275-96.

Hickson, D. J., Lee, C. A., Schneck, R. E., and Pennings, J. M., (1971) *A Strategic Contingencies' Theory of Interorganisational Power*, Administrative Science Quarterly, pp. 216-229.

Jackson, P. M., (1982) *The Political Economy of Bureaucracy*, Phillip Allen, Oxford, 295pp.

Jordan, A., and Greenaway, J., (1997), *Paradigm Shift or Muddling Through? British Coastal Water Policy 1955-1995*, CSERGE Working paper WM 97-02, Centre for Social and Economic Research on the Global Environment, University of East Anglia, Norwich, 31pp.

Kassen, M. S., (1976) *Organisational Theory: American and European Styles*, International Management and Organisation, 3, pp. 46-59.

Lindbolm, C. E., (1959) *The Science of Muddling Through*, Public Administration Review, 19(1), pp. 79-88.

Marsh, D., and Rhodes, R., (1992) *Policy Networks in British Government*, Oxford University Press, Oxford.

Miles, R. H., (1980) *Macro Organisational Behaviour* Scott, Foreman, Glenview, IL.

Mintzberg, H., (1983) *Power In and Around Organisations*, Prentice Hall, Englewood Cliffs, NJ, 700pp.

Papandreou, A. G., (1952) *Some Basic Problems in the Theory of the Firm* in Haley, B. F. (Ed.) "A Survey of Contemporary Economics" Volume 2, Irwin Homewood, Illinois.

Parsons, T., (1960) *Structure and Processes in Modern Studies*, Free Press, New York.

Pfeffer, J., (1977) *Organisational Design: The Case for a Coalition Model of Organisation*, Organisational Dynamics, Autumn, pp. 15-29.

Pfeffer, J., (1978) *Organisational Design*, AHM, Illinois.

Pfeffer, J., (1981) *Power in Organisations*, Pitman, Marshfield, MA.

Rhodes, R. A. W., (1981) *Control and Power in Central-Local Government Relations*, Gower, London.

Smith, M. J., (1993) *Pressure, Power and Policy. State Autonomy and Policy Networks in Britain and the United States*, Harvester Wheatsheaf, London, 262pp.

Thompson, P., and McHugh, D., (1995) *Work Organisations. A Critical Introduction*, (2nd Edition), Macmillan, 459pp.

8.2.8 The Netherlands

Alphen, J. S. L. J. van, and Damoiseaux, M. A., (1989) *A Geomorphological Map of the Dutch Shoreface and the Adjacent Part of the Continental Shelf*, Geologische en Mijnbouw, 68, pp. 635-652.

Colijn, C. J., (1990) *Water Management in the Delta Area*, Rijkswaterstaat, The Hague, 21pp.

Dijk, H. W. J., van, (1989) *Ecological Impact of Drinking-Water Production In Dutch Coastal Dunes*, Perspectives in Coastal Dune Management, pp. 163-182.

Gersie, J., (1991) *Parks and Nature Reserves*, European Environmental Yearbook, DocTer, London, pp. 389-391.

Jong, F., de, (1993) *Water Quality of the Wadden Sea*, in R. Hillen, and H. J. Verhagen, (Eds.) "Coastlines of the Southern North Sea", Proceedings of Coastal Zone '93, The Eighth Symposium On Coastal And Ocean Management, American Society of Civil Engineers, held in New Orleans, Louisiana, July 19-23 1993, 363pp, (pp. 162-177).

Klein, R. J. T., (1993) *Learning From The Past: The Dutch Way of Dealing With Water*, paper presented at the World Coast Conference regional preparatory workshop on *Integrated Coastal Zone Management and Responses to Climate Change*, New Orleans, 13-16 July 1993, 14pp.

Lahousse, B., Clabout, P., Chamley, H., and Valk, L. van der, (1993) *Morphology of the Southern North Sea Coast, for Cape Blanc-Nez (F) to Den Helder (NL)*, in R. Hillen, and H. J. Verhagen, (Eds.) "Coastlines of the Southern North Sea", Proceedings of Coastal Zone '93, The Eighth Symposium On Coastal And Ocean Management, American Society of Civil Engineers, held in New Orleans, Louisiana, July 19-23 1993, 363pp, (pp. 85-95).

Louters, T., Mulder, J. P. M., Postma, R., and Hallie, F. P., (1993) *Changes in Coastal Morphological Processes Due To The Closure Of Tidal Inlets In The SW Netherlands*, Journal of Coastal Resources, 7, pp 653-652.

Querido, A., (1968) *The Development of Socio-Medical Care in the Netherlands*, Routledge, London.

Reineking, B., (1993) *The Ecosystem of the Wadden Sea*, in Hillen, R., and Verhagen, H. J., (Eds.) "Coastlines of the Southern North Sea", Proceedings of Coastal Zone '93, The Eighth Symposium On Coastal And Ocean Management, American Society of Civil Engineers, held in New Orleans, Louisiana, July 19-23 1993, 363pp, (pp. 178-187).

Ronde, J. G., de, (1989) *Environmental Impacts of Enclosure Dams in the Netherlands*, in J. G. Titus (Ed.), "Changing Climate and the Coast. Volume 1: Adaptive Responses and their Economic, Environmental, and Institutional Implications", Report of the Intergovernmental Panel on Climate Change from the Miami Conference on Adaptive Responses to Sea Level Rise and Other Impacts of Global Climate Change, Presented at the workshop held in Miami, Florida, 27 November 1989 to 1 December 1989, pp. 229-234.

Klaver, J., (1992) *Water Supply*, European Environmental Yearbook, DocTer, London, pp. 625-626.

Koekebakker, P., (1991) *Sea and Coasts*, European Environmental Yearbook, DocTer, London, pp. 541-543.

Salman, A. H. P. M., (1989) *The Role of 'Stichting Duinbehoud'*, Dutch Coastal Dune Conservation: Perspectives in Coastal Dune Management, Stichting Duinbehoud, Leiden, pp. 239-247.

Toonen, Th. A. J., (1987) *The Netherlands*, in R. A. W. Rhodes and V. Wright (Eds.) West European Politics, 10, pp. 41-57.

Zwiep, K. van der, and Backes, C., (1994) *Integrated System for Conservation of Marine Environments: Pilot Study: Wadden Sea*, Nomos Verlagsgesellschaft, Baden-Baden, 244pp.

8.2.9 The United Kingdom (*including The Wash Estuary*).

Carr, A. P., (1988) *UK - England*, in H. J. Walker (Ed.) "Artificial Structures and Shorelines", Kluwer Academic Publishers, Dordrecht, pp. 137-144.

Eastern Joint Sea Fisheries Committee, (1994) *Eastern Sea Fisheries Joint Committee. The First One Hundred Years 1894-1994*, Eastern Joint Sea Fisheries Committee.

Evans, G., and Collins, M., (1987) *Sediment Supply And Deposition In The Wash* in P., Doody, and B., Arnett, (Eds.) "The Wash And Its Environment", Horncastle Lincolnshire, Nature Conservancy, pp. 48-63.

Institute of Estuarine and Coastal Science, (1992) *The Wash Management Strategy Discussion Paper 5 Water Quality And Conservation*, Institute of Estuarine and Coastal Science, The University of Hull.

Murray, A., (1991) *The Crown Estate: Management of Marine Assets*, Ecos 12(2), pp. 7-11.

National Coasts and Estuaries Advisory Group, 1992 - ongoing, *Coastline. The Newsletter of the National Coasts and Estuaries Advisory Group*, Cheshire County Council, Chester.

National Trust, (1993) *Enterprise Neptune: The National Trust's Campaign to Save the Coastline,* The Paragon Press, London.

Patmore, A., and Glyptis, S., (1979) *The Coastal Resource in Countryside* in Countryside Commission Recreation and the Coast, Countryside Commission, Cheltenham.

Payne, D., (1994) *Managing the Coast: A Review of Coastal Management Plans in England and Wales and Powers Supporting Them. Comments on the DoE/Welsh Office Consultation Paper by The Royal Society for the Protection of Birds*, Royal Society for the Protection of Birds, Sandy, Bedfordshire, 26pp.

Pethick, J. S., and Burd, F., (1993) *Coastal Defence and the Environment. A Guide to Good Practice*, Ministry of Agriculture, Fisheries and Food, HMSO, London, 156pp.

Pethick, J. S., and Leggett, D., (1993) *The Morphology Of The Anglian Coast* in R., Hillen, and H. J., Verhagen, (Eds.) "Coastlines of the Southern North Sea", American Society of Civil Engineers, New York, New York, (pp. 52-64).

Riley, J. D., (1987) *The Role of the Wash in the Biology of North Sea Fish Stocks* in P., Doody, and B., Barnett, (Eds.) "The Wash and its Environment Research and Survey in Nature Conservation Series 7", Nature Conservancy Council, Peterborough.

Schofield, J. M., Labern, M. V., Lord, R. M., and Massey, M. E., (1992) *The Wash, England And A Developing Nature Conservation Strategy* Netherlands Institute for Sea Research Publication Series No. 20, pp. 105-111.

Sheail, J., (1975) *The Concept of National Parks in Great Britain 1900-1950*, Transactions of the Institute of British Geographers New Series, 66, pp. 41-56.

Shennan, I., (1992) *Impacts Of Sea-Level Rise On The Wash, United Kingdom* in M. J., Tooley, and S., Jelgersma, (Eds.) "Impacts Of Sea-Level Rise On European Coastal Lowlands", Blackwell, Oxford, (pp. 72-93).

Warren, L., (1991) *The Role of the Crown Estate Commission in Coastal and Sea Use Management,* Ecos, 12(2), pp. 11-15.

Wilson, E., and Reamakers, J., (1992) *Index to Local Authority Green Plans. A Practical Guide* (2nd Edition), Heriot Watt University, Edinburgh.

8.2.10 Coastal Geomorphology and Biological Science

Fish, J. P., and Fish, S., (1989) *A Student's Guide to the Seashore*, Unwin Hyman Ltd., London, 473pp.

Hardisty, J., (1990a) *Beaches. Form and Process*, Unwin Hyman, London.

Hardisty, J., (1990b) *The British Seas. An Introduction to the Oceanography and Resources of the North-West European Continental Shelf*, Routledge, London, 272pp.

Jones, J. A. A., (1997) *Global Hydrology. Processes, Resources and Environmental Management*, Addison Wesley Longman, London,399pp.

Lewis, J. R., (1964) *The Ecology of the Seashore*, English Universities Press, London.

McLusky, D. S., (1981) *The Estuarine Ecosystem* (2nd Edition), Blackie and Son, London, 215pp.

Pethick, J. S., (1984) *An Introduction To Coastal Geomorphology*, Edward Arnold, London, 260pp.

Stanley, D. J., and Warne, A. G., (1993) *Nile Delta: Recent Geological Evolution and Human Impact*, Science, 260, pp. 628-634.

Tooley, M. J. and Shennan, I., (1987) *Sea Level Changes*, Basil Blackwell, Oxford.

Viles, H. and Spencer, T., (1995) *Coastal Problems: Geomorphology, Ecology and Society at the Coast*, Edward Arnold, London, 350pp.

Appendices.

Appendix 1. English East-Coast County Interviewees.

National Government

Name	Title	Organisation
Holgate-Pollard, D.	Head, Coastal Policy Branch	Department of the Environment, Bristol
Ward, R.	Coastal Policy Officer (Temporary)	Countryside Commission, Cheltenham
Laffoley, D	Head, Marine Task Force	English Nature, Peterborough
Radley, G.	Team Manager, Coastal Policy	English Nature, Peterborough
Osbourne, M.	Civil Servant	Marine Environment Protection Division, MAFF, London
Birks, C.	Head of Strategic Planning	National Rivers Authority, Bristol

County and Metropolitan Borough Councils

Sutcliffe, T.	Countryside Team Leader (Coastal Management)	Cleveland County Council, Middlesborough
Jones, M.	Section Manager, Environment Department	Durham County Council, Durham
Harvey, J.	Coastal Project Officer, Planning Department	Essex County Council, Colchester
Kilpatrick, I.	Technical Services Manager	Humberside County Council, Beverley
Raspin, P.	Head of Planning	Lincolnshire County Council, Lincoln
Williams, D.	Policy Team Leader, Coastal Management	South Tyneside Metropolitan Borough Council, South Shields
Morrison, Dr. P	Coastal Management Officer	Northumberland County Council, Morpeth
Hendle, J.	Head of Planning "Suffolk Coast"	Suffolk County Council, Ipswich
Arkell, R.	Senior Planner, Policy and Research Section	Sunderland Metropolitan Borough Council

Non-Governmental Organisations

Burgon, J.	Coast and Countryside Policy Advisor	National Trust, Cirencester
Barr, C.,	Head Warden, Heritage Coast	North York Moors National Park Authority, Northallerton
Huggett, Dr. D.	Coastal Policy Officer	Royal Society for the Protection of Birds, Sandy
Pullen, Dr. S.	Head, Marine Conservation Programme	World Wide Fund for Nature, Godalming

Appendix 2. The Wash Estuary Management Plan Interviewees.

National Government

Name	Title	Organisation
Paterson, I	Wash Estuary Project Officer	English Nature, Peterborough

County Councils

Birkett, S.	Planning Officer	Boston Borough Council, Boston
Bowe, R.	Countryside Planning Officer	East Lyndsay Borough Council, Louth
Clarke, J.	Principal Planner	King's Lynn Borough Council, Kings' Lynn
Raspin, P.	Head of Policy, Highways and Planning Department	Lincolnshire County Council, Lincoln
Clery-Fox, Mrs. S. A	Councillor	Norfolk County Council, Norfolk
King, G.	Countryside Manager	Norfolk County Council, Norwich
Alcock, R.	Councillor	South Holland District Council, Spalding

Non-Governmental Organisations

Franklin, Cpt. B	Harbourmaster	Boston Port Authority, Boston
Beach, C.	Fisheries Officer	Eastern Joint Sea Fisheries Committee, Kings' Lynn
Tame, P.	Legal Policy Officer	National Farmers' Union, East England Branch, Stamford

Appendix 3. Meetings Attended Concerning The Wash Estuary Management Plan.

Meeting	Date	Location
Wash Estuary Strategy Officers' Group	1 December 94	Kings' Lynn, Norfolk
South Holland District Council	10 February 95	Spalding, Lincolnshire
South Holland Internal Drainage Board	22 March 95	Wisbeach, Lincolnshire
Wash Estuary Strategy Local Authority Members' Group	2 November 95	Spalding, Lincolnshire
Wash Estuary Strategy Officers' Group	15 January 1996	Norwich, Norfolk
Wash Estuary Shoreline Management Plan Launch	21 February 1996	Spalding, Lincolnshire
Wash Estuary Management Plan Launch	21 February 1996	Spalding, Lincolnshire

Appendix 4. List of Dutch Interviewees.

National Government

Name	Title	Organisation
Pelk, M.	Head of Planning: Department of Wadden Sea Affairs	Department for Nature Forests, Landscape and Wildlife (L&V), The Hague
van Huijssteeden, E. J.	Planning Officer	Ministry of Housing, Physical Planning and Environment (VROM), The Hague
de Vrees, L.	Director, Coastal Zone Management Centre	Rijkswaterstaat, Coastal Zone Management Centre, The Hague
Rakhoorst, D.	Coastal Policy Engineer	Rijkswaterstaat, North Holland Directorate, Haalrem
de Wijk, J.	Chairman, Planning Department	Rijkswaterstaat, North Holland Directorate, Texel
Huizing, J. J.	Wadden Islands Coastal Defence Engineer	Rijkswaterstaat, North Netherlands Directorate, Leeuwarden
Kuijpers, J. W. M.	Head of Water Planning Policy	Rijkswaterstaat, South Holland Directorate, Rotterdam
van Alphen, J. S. L. J.	Project Leader: *Beleidsplan Voordelta*	Rijkswaterstaat, The Hague
de Ruig, J. H. M.	Project Leader: *Coast and North Sea*	Rijkswaterstaat, Tidal Waters Division, The Hague
Verhees, H. A. Q.	Head of Coastal Defence Works	Rijkswaterstaat, Zeeland Directorate Middelburg
Adriaanse, L.	Policy Director	Rijkswaterstaat, Zeeland Directorate, Middelburg
van Westen, C-J	Project Leader: *Integrated Water Management*	RIKZ, Road and Hydraulic Engineering Division, Delft
Jorissen, R. E.	Co-ordinator	RIKZ, Technical Advisory Committee for Water Defence Systems, Delft

Provincial Councils and Waterboards

Name	Title	Organisation
Kramer, T.	Secretary	Federation of Planning for the Southwest (Delta Area), Goes
Slootweg, J.	Assistant Director / Technical Co-ordinator of Planning	Municipal Council of Katwijk, Katwijk
Fopma, D.	Managing Director, Countryside Department	Province of North Holland, Haarlem
Nieuwenhuis, J. W. H.	Chief Planning Officer: Water and Planning	Province of North Holland, Haarlem
Westerhoven, J. G.	Chief Engineer: Coastal Defence Policy	Province of South Holland, The Hague
van der Sande, J. T. M.	Chief Planning Officer, Water Defence	Province of Zeeland, Middelburg
van Gelder, W	Commissioner to the Queen	Province of Zeeland, The Hague
van de Burg, J. K.	Chief Engineer	Rijnland Waterboard, Leiden
ir Byma, L.	Planning Officer	Texel District Council, Texel
van der Kolff, J.	Director of Engineering	Waterboard of Delftland, Delft

Non-Governmental Organisations

Salman, A. H. P. M.	President	*Stichting Duinbehoud*, Leiden
van der Meulen, Dr. F	Senior Lecturer, Landscape and Environmental Research Group	University of Amsterdam, Department of Physical and Soil Sciences, Amsterdam
Terwindt, Prof. D. R.	Professor	University of Utrecht, Faculty of Geographical Science, Utrecht
Woudstra, A.	Chair	Wadden Sea Protection Society, Harlingen

Appendix 5. Sample 'Semi-Structured Interview' Schedules Utilised Both in the United Kingdom and The Netherlands.

The aim of this meeting is to gain an understanding of how the planning process of the Wash Estuary/Beleidsplan Voordelta Management Plan has been designed, how it is operating, and ways in which it could be improved. This study forms an important part of my PhD, representing the local case study, and thus the 'acid test' of theories and thoughts put forward in previous work. This interview will last approximately one hour. If at any time you would like the cassette player switched off, please do not hesitate to say.

Design Of The Planning System

- Who decided on the composition of the Policy Planning Group?
- Did any organisation refuse the offer of representation, and if so, why?
- Why are there no NGOs represented on the group?
- Could you outline the hierarchy of the planning strategy?
- How does the system operate? (i.e. frequency of meetings, current deadlines, opinion of success and efficiency.)

Dynamics Of The Working Groups

- What do the Officers' Group (Inner Core) and Local Authority Members' Group (Outer Core) actually do?
- Within the Officer's Group who is responsible for what tasks?
- How have policy areas been decided (beyond the statutory obligations)?
- What degree of liaison exists between the Members' and Officers' Groups' representatives within the Council?
- Have there been areas of the plan with which you have been unhappy?
- Have conflicts over policy decisions occurred? (Between whom, and how was it resolved?)
- Has a conflict resolution system been devised? (For use within the working groups, or following the public consultation procedure.)

Planning Consultation

- How were consultees identified? (By whom and was anyone obvious missed?)
- Who ***has not*** responded that has been a surprise?
- Who ***has*** responded (perhaps kicking up a fuss) that has been surprising?
- When are the public to be consulted? Why was this choice decided upon?
- How are the working groups' operations actually reporting back to, and thence being dealt with, local councils? Is there access to the minutes of council meetings?

Where Now?

- How will the Plan's implementation change your method of working/planning the coast?
- Has your organisation decided upon an 'implementation strategy' for the plan? If so what?
- Have you encountered anyone you could describe as a 'loose cannon'?
- Who might be the most significant respondents/non-respondents to talk to?
- What is there that I have failed to ask about the planning process for the Wash/Voordelta?
- How could the procedures be improved were it to be initiated now?
- Where would you recommend I turn now?

Appendix 6. List Of Projects Included In The EU CZM Demonstration Programme.

Projects funded under the LIFE Instrument:

Reference	Country	Project Title
96/DK/012/PAZ	Denmark	Integrated Co-operation on Sustainable Tourism Development and Recreational Use in the Wadden Sea Area
96/F/386/PAZ	France	Aménagement et gestion intégrés de la rade de Brest et de son bassin versant
96/F/434/PAZ	France	Concertation, Coordination, Côte d'Opale (C.O.4)
96/FIN/071/PAZ	Finland	Planning of coastal areas at the Gulf of Finland
96/GR/537/PAZ	Greece	Programme for integrated coastal area management in Cyclades (Picamcy)
96/GR/564/PAZ	Greece	Concerted Actions for the Management of the Strymonikos Coastal Zone
96/GR/580/PAZ	Greece	Information, Concertation. Conditions pour le développement soutenable des côtes
96/P/601/LBL	Portugal	Programa de Gestão Integrada para a Ria de Aveiro - MARIA
96/UK/401/PAZ	United Kingdom	Coastal Zone Management: Development of a strategy for an open coast
96/UK/404/LBL	United Kingdom	Implementing alternative strategies in Irish beach and dune management. Community involvement in sustainable coastal development. A demonstration project in sustainable beach and dune management.
96/UK/406/PAZ	United Kingdom	The Forth Estuary Forum: A Demonstration of Effective Integrated Coastal Zone Management
96/UK/425/PAZ	United Kingdom	Demonstration Programme on Integrated Management of Coastal Zones
97/IT/072/PAZ	Italy	"RICAMA"
97/IRL/209/LBL	Ireland	"Bantry Bay"

Projects funded under the TERRA Programme:

Country	Project
Belgium	CZM - West Flanders
Denmark	Storstrøm
European Union	Concercost -La Costera-Canal ANAS
France	Concercost -La Gironde
Greece	POSIDONIA - Athens Ipiros CZM -Kavala
Italy	POSIDONIA - Napoli POSIDONIA - Taranto POSIDONIA -Palermo
Portugal	Concercost -Vale do Lima
Spain	POSIDONIA -Barcelona CZM - Algarve
United Kingdom	Cornwall Devon Kent Down District (NI)

Projects funded by PHARE (and the World Bank)

ICZM Latvia

ICZM Lithuania

Project funded by the Norwegian government:

Local Management Plans on the Norwegian Coast

Source: European Commission, 1998.

Appendix 7. List Of Thematic Studies Included In The EU CZM Demonstration Programme.

The evaluation of the pilot projects will be focussed on the following six themes:

1. Legal and Regulatory Bodies: Appropriateness to ICZM.
2. Participation in the ICZM Processes: Mechanisms and Procedures Needed.
3. The Role and Use of Technology in Relation to ICZM.
4. Planning and Management Processes: Sectoral and Territorial Co-operation.
5. Influence of EU Policies on the Evolution of Coastal Zones.
6. The Nature of the Information Required for ICZM

Source: European Commission, 1998.