

## Integrated Coastal Zone Management in Denmark

*Helle Tegner Anker, Vibeke Nellemann and Sten Sverdrup-Jensen\**

### 1. Introduction

Denmark has a long tradition for regulation and planning in the coastal area. This situation is part of the background for the relatively well-preserved natural and cultural heritage of the Danish coastal landscapes.

The Danish coastal landscapes are unique in international comparison by virtue of their great variation and extension as well as by their many special habitats for endangered species of animals and plants. Many interests are at stake in the Danish coastal zone. Today, the majority of the population is resident in the coastal areas and the greater part of the summer houses and other holiday and recreation facilities are situated here. At the same time, the near-shore waters and the interface between land and sea are the basis for fishing, marine aquaculture, extraction of raw materials, land and sea transport, harbour activities, agriculture etc.

In recent years the coastal zone, probably more than any other part of society, has been exposed to pressure and processes of change. Among these changes are urbanization and new infrastructure, exploitation for recreation and tourism, acute nature and environmental problems, retreat of coastal occupations, changed functional demands and working conditions for harbours and reorganization of freight traffic from land to sea. The many interests and the large current potential for change in the near-shore areas, make it critically important to pursue the possibilities for holistic, integrated planning and management of the coastal zone.

The need for integrated coastal zone management has been recognized at international as well as at national level. Several international and supranational institutions have called for coastal zones to be put on the agenda, e.g. at the UN Rio Conference in 1992. In Europe, the Council of Europe has elaborated a so-called “Model Law” for integrated coastal zone management, while the Commission of the European Union in 1996 initiated a so-called Demonstration Programme on ICZM (1). Following the Demonstration Programme, the European Commission in 2000 adopted a Communication to the Council and Parliament on ICZM and the European Parliament and Council Recommendation on ICZM was adopted in 2002(2).

### 2. ICZM in Denmark – a research project

---

\* Helle Tegner Anker is Professor of Law at The Royal Veterinary and Agricultural University, Copenhagen (hta@kvl.dk). Vibeke Nellemann is Senior Research Adviser in Regional Planning and Countryside Management at *Skov & Landskab*, Danish Centre for Forest, Landscape and Planning, Hoersholm, Denmark (vne@fsl.dk). Sten Sverdrup-Jensen is Senior Researcher at the Institute for Fisheries Management & Coastal Community Development (ssj@ifm.dk).

In Denmark initiatives to promote integrated coastal zone management have been few. More recently the matter has been discussed partly as a response to the above mentioned EU initiatives partly as a result of inadequacies in the existing regulatory framework and calls for protection of the coastal environment and of marine biodiversity. The latter was stressed by the Wilhjelms Committee in their 2001 Report on a National Biodiversity Strategy. The Wilhjelms Report stressed the importance of coastal areas and the need for better co-operation among authorities.

In 2002 a Regional Planning Committee was set up under the Ministry for the Environment with representatives from various authorities and organizations. The Committee was given the task to recommend changes in legislation as regards regional planning in general. As a specific issue planning in the coastal area should be dealt with by the Committee. So far no proposals have been made in this respect, but the proposals are – partly due to political circumstances - expected to be limited in nature. The Committee is, however, expected to recommend a larger degree of land-sea integration with respect to planning. A quite clear split of powers as regards land and sea respectively and the lack of comprehensive coastal planning including both land and sea areas have been major flaws in the present regulation, see below 3.

The present problems and need for new legislative and management practice initiatives as regards the coastal zone were addressed in a small-scale Danish research project initiated by the Department of National Spatial Planning of the then Ministry for the Environment and Energy, in 1997. The research project had the aim of clarifying elements in the existing Danish regulatory framework, management practices and international experience that support or impede integrated coastal zone management. The Danish Forest and Landscape Research Institute and the Institute for Fisheries Management and Coastal Community Development jointly undertook this research project during the period 1997-99.

The research project was carried out in three separate sub-projects:

*A study of international experiences* from integrated coastal zone management based on literature on five cases from The Netherlands, Sri Lanka and USA and the trilateral Wadden Sea Co-operation between Denmark, Germany and The Netherlands. (3)

*A study of the existing regulation* of the Danish coastal area carried out as a systematic reading of the Planning Act, the Nature Protection Act, the Environmental Protection Act, the Coast Protection Act and the relevant sectoral legislation concerning agriculture, fishing, extraction of raw materials, infrastructure construction, etc. and an assessment of the integrative elements herein (4). This study also includes an assessment of the integrative effect of the means prescribed or allowed for by the legislation.

*A study of the Danish coastal zone management practices* investigating a number of integration aspects and revealing elements and mechanisms in the administrative practice, which impede or expedite integrated coastal zone management(5). The study focuses on planning and administration within the themes of town and harbour development, infrastructure, tourism and holiday/recreation and sea based activities such as fishery, sea transport and extraction of raw materials



*Figure 1:*

The study of the Danish coastal zone management practices is based on a number of case studies in the counties of North Jutland and Viborg as well as cross-county case studies concerning the Limfjorden area and the southern Danish archipelago.

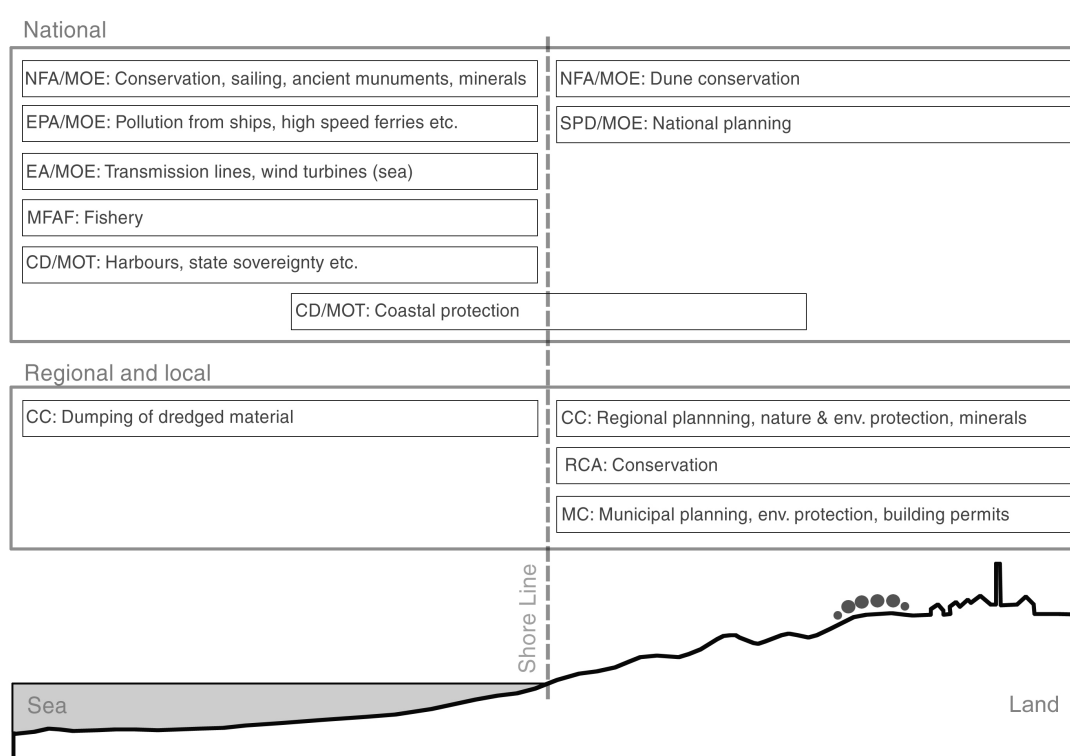
The research project focuses on the following integration aspects:

1. Integration between land and sea.
2. Integration between sector interests comprising utilisation and protection, commercial and recreational interests, etc. (horizontal integration).
3. Integration between authorities at state, county and municipal levels and public participation (vertical integration).

### 3. The regulation and management of the coastal zone and its resources

#### 3.1 Legal framework and regulatory instruments

The existing legal and regulatory framework for the Danish coastal area is scattered across a number of different regulatory systems (6). The most characteristic feature is the fairly clear split in powers as regards land and sea respectively. The regulatory system that governs land areas and land-based activities is characterized by powers vested in the regional and local authorities and by a comprehensive planning system embedded in the Planning Act. The regulatory system that governs sea areas is characterized by a sectoral approach – harbours, fishery, navigation, energy installations etc – and by powers vested in national State authorities embedded in the State Supremacy over coastal waters. There are only few co-ordination or integration requirements among these two regulatory systems.



*Figure 2:*

Central powers in the Danish coastal zone. The legal and regulatory framework implies a management barrier in the shore line.

CC: County councils

CD: Coastal Directorate

EA: Energy Agency

EPA: Environment Protection Agency

MC: Municipal councils MFAF: Ministry for Food, Agriculture & Fisheries

MOE: Ministry of the Environment

MOT: Ministry of Transport

NFA: National Forest & Nature Agency

RCA: Regional Conservation Authorities

SPD: Spatial Planning Department

The most important laws for protection of the coastal land areas are the Planning Act (7) and the Nature Protection Act (8). The Planning Act establishes a 3-kilometre inland coastal planning zone (outside urban zones) in which planning for new activities, etc. is restricted. Planning for new recreational facilities, urban areas etc. requires a specific planning-related or functional justification. Within existing urban areas the visual interference with coastal areas should be afforded attention. The Planning Act does not, however, require separate coastal zone planning - coastal protection considerations should be integrated into regional, municipal and local planning. The Nature Protection Act lays down a 300 meter in-land prohibition zone along almost the entire Danish coast. In summer cottage areas the protection zone is reduced to 100 meters. Urban areas are exempted. The exact extension of the 300 meter beach protection zone has recently been determined by a National Beach Protection Commission. New activities, construction works, afforestation etc. are prohibited in the beach protection zone, unless particular circumstances indicate a need to grant an exemption. The Nature Protection Act also ensures public access to the coast.

Relevant authorities according to the Planning Act and the Nature Protection Act are primarily regional and local authorities. The Planning Act also provides for public participation in planning procedures and environmental impact assessment procedures. The Planning Act, however, focuses on land-based activities. Regional planning aims to co-ordinate different land use interests, which are regulated more specifically by other pieces of legislation, e.g. the Environmental Protection Act (9), the Raw Materials Act (10), the Water Supply Act (11), the Forest Act (12) and the Agricultural Act (13). Regional plans take the form of guidelines for administration by regional and local authorities.

Sea-based activities are mainly regulated by sectoral laws, e.g. the Marine Environment Protection Act (14), the Raw Materials Act, the Harbour Act (15) and the Fishery Act (16). The relevant level of decision-making is normally national state authorities. The Coast Protection Act (17) deals with primarily coast erosion issues and the Danish Coastal Authority under the Ministry of Transport administers this Act. The Danish Coastal Authority also controls and administers the State Supremacy of the sea and may grant permits for different kinds of activities on the sea territory.

The legal and regulatory framework thus displays an array of different laws, measures and authorities relevant to the coastal area. Together with the above-mentioned relatively strong separation of powers as regards land-based and sea-based activities respectively, this is a clear obstacle to integrated coastal zone management, which has been confirmed in management practices, see below 3.2

A number of new legislative instruments may promote integration of coastal zone interests, however. Such instruments are, inter alia, planning and co-ordination requirements, environmental impact assessment requirements, hearing and co-operation procedures and requirements for public participation

It is possible to distinguish between two different tendencies of integration - namely (a) strengthening the role of planning and (b) incorporation of cultural heritage, environment and nature protection interests into sectoral legislation. The case studies

have demonstrated the general trend of integration via the planning process and that environmental provisions and co-operation requirements have increasingly found their way into sectoral legislation. Examples include high-speed ferries, coastal protection measures, raw material extraction, agriculture etc. However, some inadequacies are still found, e.g. as regards harbours and other sea-based installations. In these circumstances there are no formal co-ordination or integration requirements apart from a general consultation between State authorities.

*Environmental impact assessment* is an integrative instrument, which comprises both horizontal and vertical integration aspects, i.e. between different sectors and between levels of decision-making, including public participation. Assessments of both projects and plans are important in this respect, even though Danish rules are still primarily directed towards projects. The EU Strategic Impact Assessment Directive must be implemented by the end of 2003 and will require strategic environmental assessment of regional and municipal plans. It is necessary to distinguish between assessment of land-based activities according to the Planning Act and assessment of sea-based activities according to sectoral legislation. In relation to the Planning Act relevant authorities and the public must be consulted during the EIA process whereas public participation and consultation requirements are much weaker as regards sea-based activities.

Procedures for *hearing* of relevant authorities and organizations are often part of the legislative requirements, e.g. in relation to environmental impact assessment, or part of more informal procedures, e.g. co-operation between authorities and establishment of ad-hoc fora. Hearing requirements often intend to achieve horizontal integration of sector interests. It may, however, also reflect a vertical integration, in particular when planning authorities at various levels are involved. The Danish administrative culture which emphasizes informal personal contacts cutting across different authorities and levels of administration, also represent an important, yet informal and not very transparent integrative element.

*Public participation* is a central element of the Danish Planning Act, but not a characteristic of other parts of environmental legislation nor of other regulatory systems, e.g. at sea. In the planning system coastal issues have a fairly high degree of public attention and involved parties and citizens normally participate actively in environmental impact assessment and nature management projects. It is, however, unclear whether a similar interest will manifest itself in relation to coastal zone planning or environmental assessment of planning initiatives. The case study material supports the opinion that public participation promotes integrated coastal zone management cf 3.2.

### **3.2 Management practice**

The study analyzes the management practices in the counties of North Jutland (4 cases) and Viborg (3 cases), as the coastal zone management problems in these two counties are considered typical and relevant to the rest of Denmark. In addition, two cross-county case studies concerning the Limfjord area and the southern Danish archipelago are included which represent problems of particular relevance for coastal zone management cf. Figure 1)(5). The study of management practice comprised the

analysis of written material, review of the relevant law basis (on the basis of sub-project 2) and interviews with representatives of the municipal, county and state authorities involved.

In the county of North Jutland the cases were: 1) Extension of the Port of Aalborg to accommodate the production of large, tow-away, tunnel and bridge components, 2) establishment of an exhibition and amusement park on the coast near to the county capital of Aalborg, 3) construction of a coastal holiday resort at Egense, on the Danish east coast (Sea of Kattegat), and 4) deposit of huge volumes of sand recurrently excavated from the inlet to the port of Hirtshals on the Danish west coast on the shore next to a public nature resort.

In the county of Viborg the cases were: 1) Upgrading of the port of Skive in the Limfjord, 2) extension of the fishing port of Hanstholm on the Danish west coast to accommodate more business enterprises, and 3) re-shaping of the freshwater Hjarbaek Fjord area (part of the Limfjord) to its former saltwater status through the permanent opening and possible removal of the sluice gate on the Virksund Dam. This latter case, where part of the Limfjord in the early 1960'es was reclaimed for grassland use at the expense of fisheries by the construction of a road dam, has a forty year long history of fierce coastal zone management debate in Denmark. Unexpected environmental impacts, mosquito plague in particular, affecting the recreational quality and amenity value of the area have in the late 1990es led to restoration of the natural aquatic milieu in the fjord.

The two cross-county studies comprised a fisheries management plan for the Limfjord area and an integrated development plan for recreational activities and nature protection in the southern Danish archipelago. These two cases represent activity oriented coastal management whereas the seven other cases mostly represent construction oriented management.

### ***Integration between land and sea areas***

The analysis shows only few examples of successful integration between land and sea areas in terms of: a) recognition by competent authorities of opportunities/problems in the transition zone between land and sea, b) planning and management actions initiated in response to such opportunities/problems, and c) solutions found that are integrative and well balanced. The holiday resort in Egense is one such case and the restoration of the Hjarbaek Fjord may be considered another. The reason for this state of affairs is most probably the management barrier which the shore line is representing in the Danish regulatory system, cf. 3.1.

The analysis of management practices demonstrates that the missing integration of legislation, planning and resource management across the coast line, in some cases leads to situations which conflict with the overall goals and strategies for the coastal zone. One such case is the Hirtshals port sand deposit, which intended to supply material in short natural supply in the region to ongoing and planned major road construction works but happened, with no alternative options, to be situated at the verge of a nature resort and therefore was in conflict with recreational policies and priorities.

### ***Sector integration***

The criteria applied for analysing sector integration in management practice are: a) how the competent authorities deal with sector integration when this is a legal requirement, b) the extent and scope of the voluntary collaboration between management authorities on integration of different sector interests in the coastal zone, and c) how the various sector interests are mitigated and if holistic solutions are reached.

The character and extent of sector integration in Danish coastal zone management is evidence of the management barrier that the coastline constitutes between the dominantly land oriented competencies that rest with the regional and local authorities according to the Planning Act and the Environmental Protection Act, and the primarily sea oriented competencies that various sector authorities have according to specific sectoral laws.

Sector integration is mandated in the Planning Act but the integration only comprises those sectors where counties and municipalities are competent authorities (e.g. spatial planning for the land area).

Some sectors are not subject to legal requirements for integration of specific protective measures in the coastal zone. As an example local authorities cannot establish geographically differentiated requirements for agriculture in coastal areas in order to meet quality standards for coastal waters.

Because of the lacking land-sea integration in legislation, management of fishing, sea transportation, raw material extraction, etc. is, by and large, not integrated with the management of other activities in the coastal zone, e.g. recreation and tourism.

Increasingly, there is a wish in the coastal communities to have a bigger say in local business development and the commercial utilization of the coastal resources. This is reflected in the importance given to commercial development policies by county and municipal councils. The reason for this is that it is the local communities that have to deal with the social consequences of sector policies that fails, as experienced with fisheries.

Only a few of the cases analyzed have sector integration as a legislative requirement, apart from where the general integration provisions of the Planning Act apply. These cases are the extension of the Port of Aalborg case and the case of an exhibition and amusement park near by. In both cases EIA's were required by law (construction works in the sea territory). However, other cases demonstrate that voluntary cooperation between different authorities have been established in order to find balanced solutions to development opportunities, problems and sector conflicts. Voluntary collaboration between authorities and citizens in strategy planning, spatial planning and action oriented management, as demonstrated in the southern Danish archipelago, show what may be achieved from integrated coastal zone management.

The majority of the cases investigated indicate insufficient sector integration in relation to the national goals for the resources and activities of the coastal zone and in relation to the functional relations across the coastline. This is primarily considered to be the result of the limited scope of the Planning Act as regards the sea territory and

in a number of sector areas. The Planning Act thereby constrains the formal possibilities for regional and local authorities to undertake sector integrative planning and management.

The analysis has demonstrated that the Planning Act's exclusion of the coastal part of urban zones from the coastal planning zone and the associated general coast-political strategies that are managed by the county authorities can hamper a holistic, sector-integrative management practice. The Hanstholm fishing port case is an example of this.

### ***Integration between different authority levels and public participation***

The analysis of the vertical integration is based on the following criteria: 1) If the competent authorities on all administrative levels are involved in the management and if the general public is adequately involved/informed, 2) if the collaborative relations between the parties are professional, and 3) if viewpoints and answers are internally balanced with authorities having responsibilities in multiple areas of management.

Denmark has a long tradition for vertically integrated management of the landward part of the coastal zone, including substantial decentralization and management integration between authorities at national, regional and local levels. This applies both to comprehensive spatial planning and sector planning in general and to the administration of specific cases of resource utilization and/or protection. Equally, there is a tradition for involvement of the public as a hearing party in the process of spatial planning and EIA. This is, however, first and foremost the case within those parts of coastal zone management that are covered by the Planning Act. The greater part of the sectoral legislation which regulates the coastal zone do not have similar provisions for decentralization of the management competence and ex ante involvement of the public and the affected citizens in the decision process, e.g. through information dissemination and hearing.

Many of the cases studied show a management practice in Denmark that involves and integrates authorities at different management levels in accordance with the Planning Act. Involvement of the public and NGO's also seem to be as prescribed in the Act. However, it appears from the two cases from Aalborg that political interest in a coastal project both at local and regional level as well as interest from the media, may enhance the integration process significantly.

Several of the analyzed cases, such as e.g. the Skive Port case, have, however, shown processes and results which, despite compliance with the prescriptions of the Planning Act, including hearing of users and the public, are inadequate in relation to the intentions of an integration of resources and activities in the coastal zone. It seems that a better integration could have been achieved through overall coastal policy strategies and spatial planning comprising both land and sea territory.

Moreover, the analysis of the management procedures applied shows from successful and less so examples that it can be advantageous for the cooperation between different authorities, if one authority is given the overall responsibility for the sector integration.

### *Integration through instruments*

The coastal zone legislation in Denmark comprises a full range of different regulatory systems, which implies a split of competencies and powers on many different authorities. This set-up implies a high risk of insufficient integration. However, a number of new laws and management instruments indicate that there is a political intention to promote integration in management of the coastal zone.

Each regulatory system within the coastal legislation makes use of different instruments that to a larger or smaller extent promotes the integrative aspect, such as e.g. requirements for planning and/ or coordination, hearing procedures, requirements for participation and EIA. In addition to the different regulatory systems the choice among the above mentioned instruments are important for the practical realization of the integration. The assessment criteria applied in the analysis are: 1) If other instruments that those prescribed by law have been applied and if they have facilitated integration, 2) if the application of certain instruments prescribed in the legislation has been particularly supportive of integration.

*Spatial planning* as an instrument is prescribed in the Planning Act. It promotes integration, but in practice it has limited impact on sectors that are not in the resort of the Ministry of Environment. This is particularly the case for sea based activities that are normally not included in the spatial planning. On the basis of the cases analyzed it can be stated, that planning in general supports the integration of resources and activities in the coastal zone.

*EIA* is an integration facilitating instrument which comprises horizontal and vertical integrative elements (land–sea integration and integration between different administrative layers). The study indicates that it can be concluded that in those cases subject to the EIA requirements of the Planning Act all the authorities affected and also the general public have been involved in the planning process. Because of the few (two) examples of a full EIA it is not possible to conclude on the importance of the EIA instrument for the aspects of integration.

*Hearing* of all authorities and organizations affected is in the cases of the study either implemented because it was a legal requirement e.g. as part of EIA, or the result of a voluntary initiative as in the case of the development of the fisheries management plan of the Limfjord and the Hjarbaek Fjord case as well. It appears that hearings are supportive for integration, the more the earlier in the process they are implemented.

*Public participation* is considered crucial in the international debate on ICZM. Participation is prescribed in the Planning Act and the general public has been involved accordingly in all cases within the domain of this law. The case study shows that coastal zone issues are of interest to the public, and that affected land owners, users and the public in general participate actively in the debate and in the planning process on new constructions and activities in the coastal zone.

*Voluntary collaboration* between public authorities or between authorities and the citizens on strategy planning, spatial planning and action oriented management has demonstrated that integrated coastal zone management has a lot of potential. Again

the fisheries management plan for the Limfjord is a case in point together with the development plan for the southern Danish archipelago. The holiday resort at Egense is another example.

### **3.3 Relevance of experiences from abroad**

#### ***Integration between land and sea areas***

The foreign cases analyzed comprise USA (Florida and Rhode Island), the Netherlands (Eastern Scheldt), Sri Lanka and the trilateral collaboration between Denmark, Germany and the Netherlands in the Wadden Sea.

All the cases are characterized by the coastal zone being defined both seawards and landwards, and that the management competence includes resources and activities both on the sea territory and the land territory. In most cases the situation is such that the sea territory in the coastal zone, as defined in the coast management acts, stretches longer (2 km - 3 nautical miles) from the shoreline than the land territory. This definition of the coastal zone reflects a clear understanding of the fact that it is in the interface between land and sea that the special coastal zone problems occur, which necessitate special attention to the coastal zone management.

Apart from the trilateral cooperation in the Wadden Sea, where the Danish area includes both land and sea territory, it is characteristic for the Danish coastal zone management that there is no definition or delimitation of the coastal zone that includes any part of the national sea territory. The provisions of the Planning Act only regulate the activities and the exploitation of resources which take place landwards along the shore line, irrespective of the close relations which often exist between the activities on land and at sea.

For this integration aspect it seems evident that the experiences and practices outside Denmark should be drawn upon in the Danish coastal zone debate. Experiences from the analyzed cases as well as from other examples show that the coastal zone should include both a land and a sea territory. The extension of the territory on land and at sea should ideally be determined by the nature of the problems, which would be solved through the establishment of integrated coastal zone management rather than by administrative criteria. This means that the spatial definition of the coastal zone should be variable, so that the coastal zone includes land areas with decisive influence on water quality, fauna and flora in the sea territory and vice versa.

#### ***Sector integration***

Most foreign cases show a development in coastal zone management from an initially rather narrow focus, typically on coast protection, towards a situation characterized by a more holistic approach to management characterized by an understanding of the interdependencies between the many problems in the coastal zone.

Even though most cases point towards a future wide range of "Special Area Management Plans" which integrate the management of many, often competing, sectors in given locations, it is characteristic that important coastal zone activities, such as fishing and oil extraction, are only rarely included in the integrated plans. This often causes problems, as other sectors have to endure the derived and often negative

effects from these two sectors. Here, Denmark makes no exception. Even if a number of sectors are involved in the management of the coastal zone, it is characteristic, inter alia, for the reason of lack of land-sea integration that fishing, sea transportation, etc. are not integrated into coastal zone management.

The foreign cases hold examples of the establishment of unitary administrations with responsibility for the use of the coastal zone and its resources, as well as institutional solutions in the form of coordinating networks between independent sector authorities. The different institutional alternatives found in the study, range from the establishment of a new centralized management unit, as was the case in Rhode Island, to the establishment of an inter-ministerial cooperation forum as was the case in Florida and in the Netherlands. It is important to mention that integrated coastal zone management does not call for new decision making fora, but for better integration obtained within established decision making structures. This applies especially at national and regional levels. At the local level, it would often be advantageous to establish integrated management units.

It may be necessary, however, that one sector authority as "lead agency" takes the overall responsibility for sector integration in the coastal zone management. If the initial step towards integrated coastal zone management is the establishment of an inter-ministerial council or commission, which is often the case, it is important that one of the participating parties is given the responsibility to drive forward the initiative and the integrative purpose, e.g. via a presidency and/or a secretarial function.

#### ***Integration between authority levels and involvement of the public***

Most foreign cases show a clear development of coastal zone management from centralized management towards vertically integrated management, where the responsibility is shared between national, regional and local authorities. The cases also show a development towards a "bottom-up" approach to management with emphasis increasingly put on the active participation of the public in planning, implementation, monitoring and evaluation.

The only case representing a slow development towards increased vertical integration and involvement of the users, is the trilateral Wadden Sea cooperation which is still characterized by a "top-down" approach to management dominated by national level authorities.

In relation to the coastal zone management problems in Denmark, it is probably foremost in relation to the activities on the sea territory that foreign experience can be beneficial. The Danish Planning Act and the informal cooperation procedures established, form the basis of a high degree of integration between the different authority levels dealing with land based activities.

## **4. Discussion**

A particular aspect should be kept in mind when integrated coastal zone management in Denmark is discussed, viz. the interplay between the formal regulatory basis and the way in which the laws are administered in practice. It may happen that formal integrative requirements do not penetrate into practical management or that in practical management, emphasis is put on particular integrative elements, which do not relate to the legal framework. The latter is the case as regards informal hearing procedures between different authorities at national, regional and local levels. Such informal integrative measures can be of great importance in respect of integration, but they can also make decision-making less transparent to the individual citizen, unless it is made clear who is involved in the decision making and how. A more fundamental issue is, however, to improve knowledge about coastal zone processes and the interplay between land and sea.

Based on the findings in the research project, a number of key issues for enhanced integration are presented below. The points identified include both innovations within the legal system and initiatives within practical planning and administration.

#### **4.1 Land-sea integration**

Land-sea integration is an aspect of special importance and perhaps, particularly problematic in Denmark. This is primarily due to the regulation system's failure to transcend the shore line, whether from the seaside or from land. Particularly notable is the distinction between national level management of the sea territory and regional or local level management of the land territory. This is demonstrated in the many sectoral laws for activities at sea and in the limitation of the Planning Act to relate to land based activities only.

A possible integrative measure in this connection would be a clear definition of the coastal zone to include both land and sea areas. However, a definition does not need to specify the coastal zone in detail. Rather, it might be preferred to have a variable definition to be specified either in individual cases or in the planning process.

Another important element in a Danish context could be to widen the scope of the Planning Act to include near-coast sea territory, e.g. in regional planning or in specific coastal management plans. Such plans could be drawn up on the basis of holistic coastal policies, including both land and sea territories and coastal activities - e.g. harbours, sailing, fishing, tourism, raw material extraction, wind mills, protection of nature and cultural heritage, etc. A further step would be to include sea based coastal activities and their interplay with land based activities. In fact, initiatives have recently been taken to examine such possibilities in greater detail. A widening of the scope of the Planning Act was proposed by the so-called Wilhelm Committee in their 2001 Report on a National Biodiversity Strategy (18). Furthermore, the Regional Planning Committee is expected to bring forward proposals for a restructuring of regional planning, e.g. in relation to coastal planning.

Incorporation of provisions for coastal protection and management co-ordination across the shore line in more sectoral laws, may also improve land-sea integration through greater incorporation of "land-interests" in the sectoral legislation on sea-based activities, e.g. hearing procedures and requirements for environmental impact assessment. The Coast Protection Act shows a number of examples of land-sea

integration in connection with coast protection measures, primarily through involvement of a range of stakeholders and authorities. Something along the same lines might be tried out in relation to e.g. harbour legislation.

## **4.2 Sector integration**

The problems related to sector integration are partly coincident with the above mentioned problems concerning land-sea integration, as a number of sectoral laws specifically regulate sea-based activities, e.g. harbours and fishing. Also on land there are a number of sectoral laws important to the coastal zone, e.g. agricultural legislation and raw material extraction legislation. In a number of these land-based sector areas, there is already an important element of integration of environmental concerns (i.e. reduction of pollution). However, the regulations are only to a very limited extent directed towards especially sensitive coastal areas.

Possible integrative measures might comprise a differentiation of general rules for pollution reduction, e.g. regarding nitrate discharge from agriculture, to accommodate needs in environmentally sensitive coastal areas. Differentiation today is primarily taking place in relation to individual regulation, e.g. waste water permits, environmental permits, etc. Another sectoral law integration measure could be the increased incorporation of environment and coast protection in the sectoral legislation, e.g. requirements for environmental impact assessment, where there might be a need for more detailed procedures or guidelines. This applies for example to harbours and fisheries.

A third measure could be a widening of the Planning Act to incorporate important (i.e. commercial) sector interests in the spatial planning and management of the coastal zone which at the moment are outside the resort of the Minister for the Environment, e.g. regional harbour and sea transport planning coordinated with the other transport strategies in the regional plan. This might also facilitate the co-ordination of tourism and other activities - possibly in management plans for specific coastal areas in combination with the use of support schemes for nature restoration, agriculture, fisheries, etc.

Generally, increased incorporation of hearing procedures, advisory committees, etc. or the appointment of advisory regional coastal zone committees with representation of relevant sector interests, is likely to improve sector integration. There is, however, in Denmark a strong opposition, in particular among practitioners, towards new formalized co-operation procedures. Co-ordination might also be sought as regards supervision and enforcement – in fact a special co-ordination committee has been established for supervision of sea-based infrastructure.

## **4.3 Integration of different management levels including public participation**

The Danish planning system secures a certain degree of vertical integration between the different management levels (national, regional, local) and the involvement of the public. This is, inter alia, stated in the special coastal planning provisions of The Planning Act. However, the exemption from the coastal planning zone of the near

shore parts of the urban zones is problematic as national or regional protection interests at times collide with local development interests.

Furthermore, involvement of the general public requires that the material disseminated for debate, has a certain quality and a certain level of detail. Involvement of the general public is a weak point in the major part of the sectoral legislation - also within environmental legislation. Special problems as regards co-ordination between authorities may exist within the more centralized regulation systems.

Measures to increase integration in this area could be increased co-ordination requirements, e.g. on the basis of holistic regional coastal policy strategies and comprehensive spatial planning for the entire coastal zone, comprising the sea territory as well as the rural areas, the summer cottage areas and the near shore parts of the urban zone. Another issue could be increased involvement of the public, in thematic planning for the coastal zone or in the administration of sectoral legislation, e.g. in connection with increased requirements for environmental impact assessments. The above-mentioned appointment of advisory regional coastal zone committees with representatives from sector interests and local communities could also improve integration. A less interfering mechanism could be the appointment of a lead agency or contact persons within the authorities or, possibly, an inter-ministerial committee which can/must be consulted in the particular cases.

#### **4.4 Do we need a "Coastal Zone Law" in Denmark?**

A number of the integrative measures mentioned above cover more than one integration aspect - e.g. integrated coastal zone planning, environmental impact assessment, hearings, advisory committees, etc. These measures, however, do not eliminate the fundamental problem that the regulatory system covering the coastal zone is not easily comprehended, because a great number of different laws and authorities are involved. At the same time, an increased use of integrative measures can result in other (new) integration problems. A solution to the lack of clarity and to the complexity could be the passing of a special coastal zone act, laying down the fundamental requirements and procedures for activities in the coastal zone. Elements in such a coastal zone act could be:

- X Clear definition of the coastal zone, including both land and sea areas.
- X Stipulation of the fundamental principles for the management of the coastal zone.
- X Requirements and guidelines for integrated coastal zone planning.
- X Requirements and procedures for environmental impact assessment of all activities with significant impact on the coastal zone - both projects and plans.
- X Requirements for the involvement of the general public.
- X Hearing requirements regarding authorities, organizations, and other stakeholder

groups.

- X Appointment of regional or inter-regional advisory coastal zone committees with sector and local community representation.
- X Appointment of an inter-ministerial coastal zone committee.
- X Regulations on co-ordinated supervision and enforcement.

## **5. References**

1. See European Commission: Lessons from the European Commission's Demonstration Programme on Integrated Coastal Zone Management, 1999.
2. Communication from the Commission to the Council and the European Parliament on "Integrated Coastal Zone Management: A Strategy for Europe", COM/00/547 of 17 Sept. 2000) and the European Parliament and Council Recommendation concerning the implementation of Integrated Coastal Zone Management in Europe, OJL 2002/413/EC of 30 May 2002.
3. Pedersen, J.D. and S. Sverdrup-Jensen: "International Experiences from Integrated Coastal Zone Management. Best Practices", Ministry of Environment and Energy, National Spatial Planning Department, Copenhagen, 1998. (in Danish)
4. Anker, H.T.: "Regulation of the Coastal Zone in Denmark", Ministry of Environment and Energy, National Spatial Planning Department, Copenhagen, 1998. (in Danish)
5. Nellemann, V. and S. Sverdrup-Jensen: "Assessment of the Coastal Zone Management Practice in Denmark", Ministry of Environment and Energy, National Spatial Planning Department, Copenhagen, 1998. (in Danish)
6. Anker, H.T.: "Legal Aspects of Integrated Coastal Zone Management in Denmark", *Revue Juridique de L'environnement*, N. Special, 2001, pp. 107-129.
7. Planning Act, Consolidated Act No. 518/2000.
8. Nature Protection Act, Consolidated Act No. 85/2002.
9. Environmental Protection Act, Consolidated Act No. 753/2001.
10. Raw Materials Act, Consolidated Act No. 569/1997.
11. Water Supply Act, Consolidated Act No. 130/1999.
12. Forest Act, Consolidated Act No. 958/1996.

13. Agricultural Act, Consolidated Act No. 598/1999.
14. Marine Environment Protection Act, Act No. 476/1993.
15. Harbour Act, Act No. 326/1999.
16. Fishery Act, Act No. 281/1999.
17. Coastal Protection Act, Consolidated Act No. 243/1994.
18. Wilhjelm Committee; Danish Nature – status, trends and recommendations for future biodiversity policies, 2001, p. 24, available on [www.sns.dk](http://www.sns.dk).