

## **Integrated Coastal Zone Management (ICZM): From European strategy to practise in Germany**

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### **Abstract**

A sustainable development and the harmonization of nature protection with economical and social development are the main objectives of Coastal Zone Management (ICZM). The European Community plays an active role in promoting ICZM in Europe. The EC developed a strategy and funded demonstration projects in many European countries. The awareness of the necessity of ICZM increased in all European countries, but well defined structures and national ICZM-frameworks are still the exception.

Spatial planning in Germany already covers many aspects of ICZM, but severe shortcomings are obvious: Competences are overlapping and responsibilities scattered, the legislation is sectoral and complex, at the moment, spatial planning does not take the coastal waters into account, a pronounced division between coastal waters and land still exists, there are shortcomings in co-operation, communication and public participation and the availability of data and access to information still needs improvements.

Status, problems, shortcomings, and requisites of Integrated Coastal Zone Management in Germany are outlined and discussed.

## 1 Introduction

The term 'Integrated Coastal Zone Management (ICZM)' as well as concepts linked to it, received great attention during the last decade. The European Community plays a very active part in promoting ICZM and sustainable development in Europe. A definition and general evaluation of the state of Integrated Coastal Zone Management in Europe is provided by two reports published by the European Commission 'Towards a European Integrated Coastal Zone Management Strategy' and 'Lessons from the European Commission's Demonstration Programme on Integrated Coastal Zone Management' (EC 1999a,b):

**'Integrated Coastal Zone Management is a dynamic, continuous and iterative process designed to promote sustainable management of coastal zones'.**

'Integrated' refers to the integration of objectives and the multiple instruments to meet these objectives. The term 'management' means the full cycle of information collection, planning, decision making, management and monitoring of implementation.

The lessons from a German point of view were discussed and compiled during a national workshop (Gee et al. 2000). Recently, the EUCC – 'The European Union' supplied a supplementary overview and comparison of ICZM in European countries (EUCC 2001). Against this background and on the basis of results and discussions at several recent conferences and workshops, the status, shortcomings, and requisites of Integrated Coastal Zone Management in Germany are outlined.

## 2 ICZM in Europe

Van Buuren (EEA 2000) evaluated the state and progress of ICZM in altogether 181 regions in 14 European countries. The criteria and results are shown in Table and Figure 1. The results in detail are questionable, but pronounced gradients in the implementation of ICZM between the European countries become obvious. The situation in the Netherlands and the United Kingdom are most advanced and examples of fully established ICZM are available. ICZM is partially established in all regions in Germany. This does not mean that a framework and defined structures for ICZM are available in Germany. The relatively positive situation is a result of the well established, hierarchical spatial planning system that covers the entire country.

Extent of progress	Criteria
1. Fully established ICZM	Refers to those regions where ICZM is operational for the whole coastal area. In these cases, the ICZM process includes the following key elements: <i>Horizontal integration</i> : integrated approach to planning (including environmental and economic issues) <i>Vertical integration</i> : administrative bodies working together at both a state and a regional level <i>Public participation</i> : public participation or consultation in cross-sectoral planning
2. Partially established ICZM	Regions where ICZM is operational in specific areas of the coast, but not for the region's coast as a whole.
3. ICZM in progress	Regions where ICZM has reached the stage of active preparation for whole or part of the coast.
4. Little or no progress	Regions where some environment and spatial planning tools exist, but key elements of ICZM are not occurring. Regions where ICZM is not being considered.

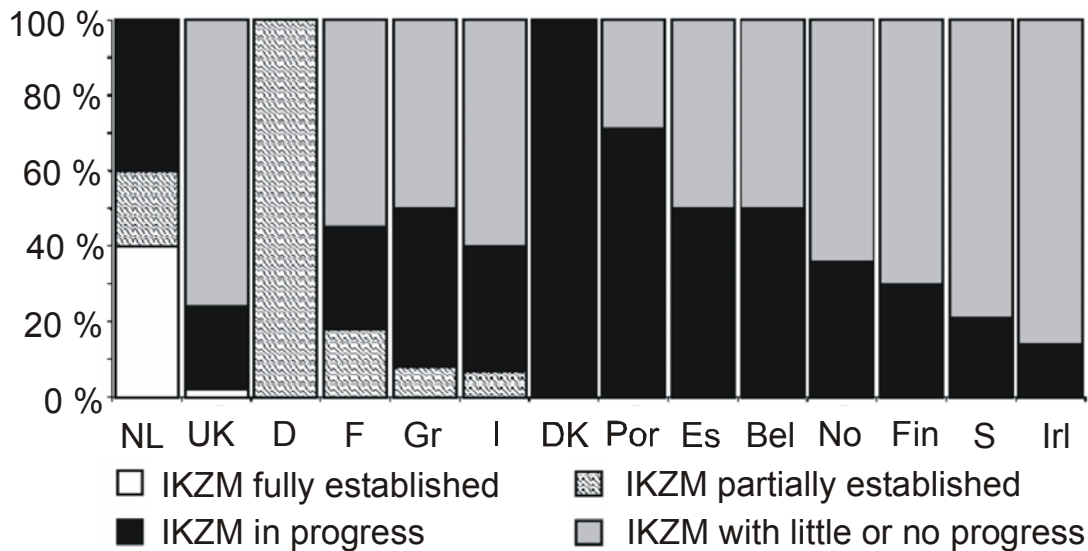


Figure & Table 1: Criteria used to assess the state of ICZM and results (van Buuren in EEA 2000).

### 3 ICZM in Germany

#### 3.1 The German coast

The German coastline has a length of 3379 km. About 2000 km can be attributed to the Baltic Sea and the remainder belongs to the North Sea (EUCC 2001). Glacial, marine and brackish sediments are, with a few exceptions, the basic material along all German coasts. The marine North Sea coast is characterised by tide, which is more or less lacking in the brackish Baltic Sea. The coast shows a large variety of forms and a complex coastline with cliffs, lagoons, estuaries, bays, mudflats, peninsulas, flat coast and islands.

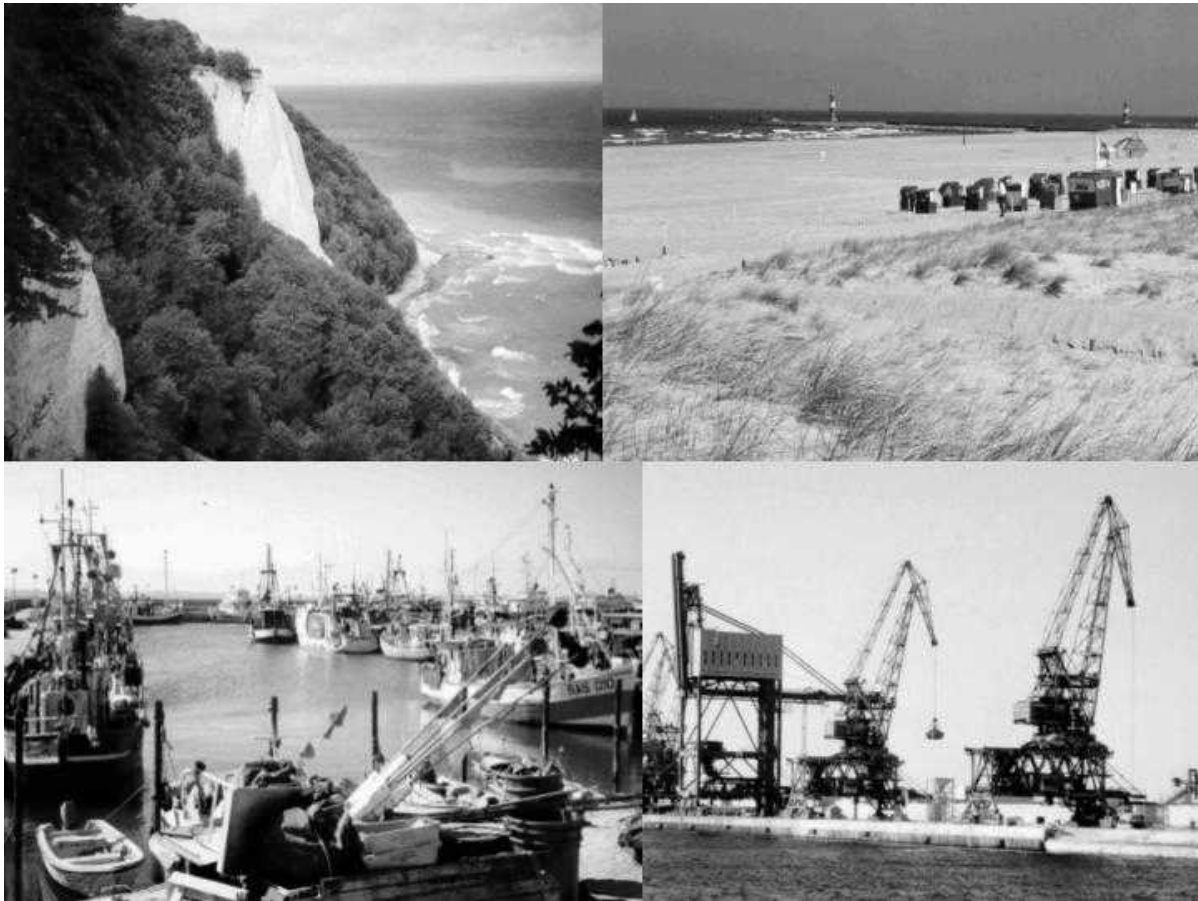


Figure 2: The Baltic Sea coast in Germany: The white cliffs of Rügen, dunes and beach in Warnemünde, the fisheries harbour in Sassnitz and the industrial harbour of Rostock.

The intensive utilization of the coastal zone is well known. This holds not only for the terrestrial parts but for coastal waters, too. For example, ship traffic, harbours, roadsteads, gravel and sand dredging, petroleum and natural gas exploration, pipes, off-shore wind energy, cables, maritime tourism, military, fisheries, aquaculture, coastal protection, ocean dumping and last not least nature protection cause a complex and overlapping pattern of uses in our coastal waters.

### **3.2 Legislation and overlapping competence**

Germany has no defined national law or policy for coastal zone management. Far more than 30 national laws, regulations and directives have relevance for the coastal zone. The laws usually meet specific, sectoral requirements. In coastal waters alone, more than 10 national and federal state ministries as well

as national, federal state and regional authorities bear responsibility. A special problem in coastal waters is the varying spatial extension of competences. With respect to mining and mineral exploitation, for example, the federal state minister is responsible up to the coastal sea boundary (12 nautical miles). The national ministry is responsible in the following Exclusive Economic Zone. Another example, with respect to maritime tourism the national and federal state ministries, the Federal Maritime and Hydrographic Agency as well as two regional authorities possess competence. There is an urgent demand for a clarification of competences between federal states and national ministries and authorities. Further, an integrative, inter-sectoral legislative framework for ICZM is needed.

### **3.3 Responsibility for coastal management and spatial definition**

Altogether 5 federal states (Länder) share the German coastal zone: Niedersachsen, Schleswig-Holstein, Mecklenburg-Vorpommern as well as the city-states Hamburg and Bremen. The Länder bear the main responsibility for coastal management. Basis is the well developed, hierarchically designed spatial planning system, which can be regarded as integrative in several aspects. Most important in this respect are the legal binding Regional Planning Programmes prepared by State Regional Planning Authorities for every Federal State or region. The results of the planning process are maps showing actual uses and future development goals (Fig. 3). Regional Planning Programmes ensure a continuity and reliability of planning and decision processes.

An official definition of the Coastal Zone is lacking and ICZM-approaches differ between the federal states. Therefore, a national ICZM-strategy would be useful. It should comprise a clear definition of the coastal zone, a joint terminology, joint principles, outline main topics as well as instruments for implementation. There are doubts whether State Regional Planning Authorities as well as the spatial planning system are flexible enough, to embrace the complex ICZM process. Especially in scientific circles there are multiple demands for a reorganization of the existing system into an institutional framework with explicit mechanisms for an ICZM implementation. On the other hand, recent legal advice points out that the planning act and tools are generally suitable to be extended towards coastal waters (Erbguth 2001). In practice, the intended extension towards the sea will strengthen the position of Planning Authorities as leading actors in German ICZM. Examples from

England show that an integration of management strategies with spatial planning systems is need anyway (Taussik, 2000). Future discussions should concentrate on how the existing system can be improved and developed further be to meet ICZM requirements.

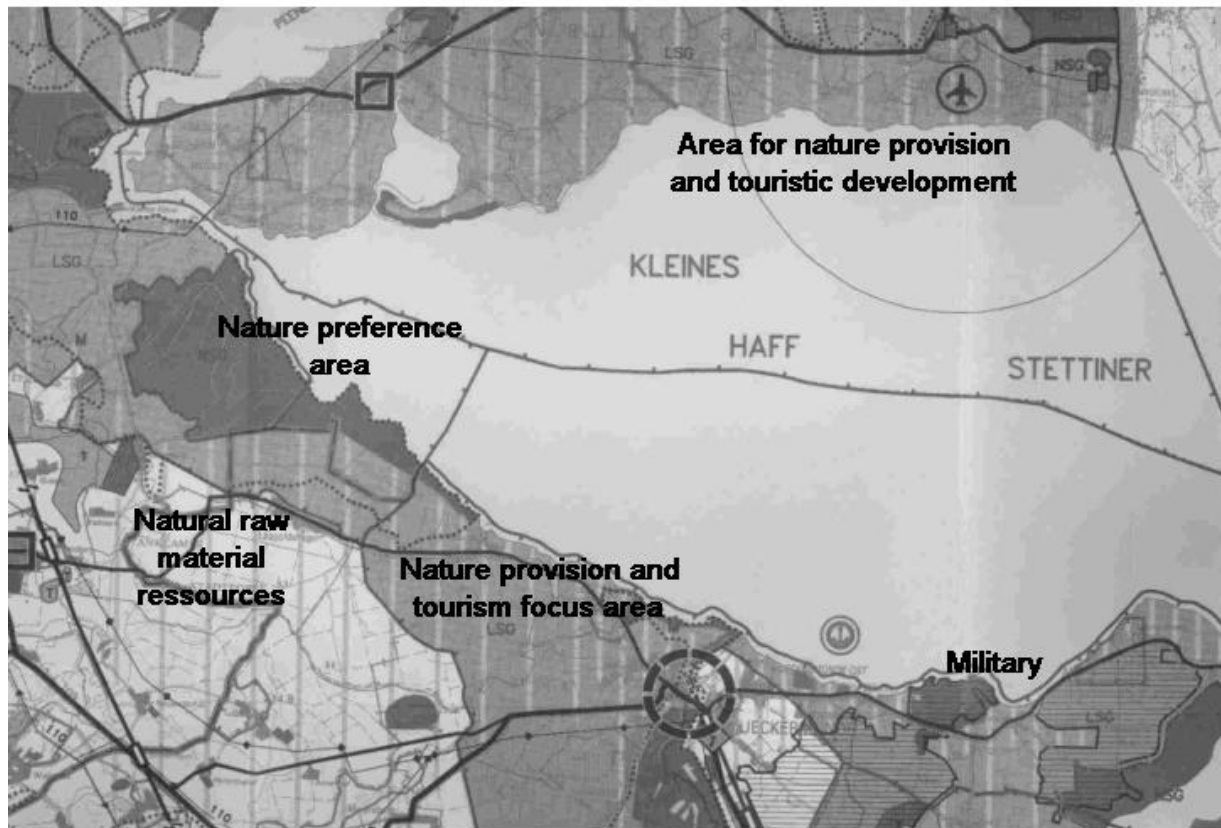


Figure 3: The Regional Planning Programme Vorpommern 1998 (Regionales Raumordnungsprogramm Vorpommern 1998) with an original scale of 1:100.000. The 30 km\*22 km cutting shows the German part of the Oder Lagoon and its coast.

### 3.4 Coastal waters and the land-sea boundary

The coastline is the main boundary within the coastal zone. Laws, responsibilities, stakeholder, and approaches differ between terrestrial areas and coastal waters. The Planning Programmes cover the terrestrial part up to the shoreline. Coastal waters are not subject to spatial planning. Obenaus et al. (1999) compiled the different spatial important uses in coastal waters of Mecklenburg-Vorpommern. The results show that a problematic overlapping of uses already exists. Sometimes different authorities are not aware of this

overlapping. A lack of available areas for future developments, e.g. off-shore wind energy plants, is already obvious. Further, the Baltic Region is expected to become a major centre for economic growth and prosperity in Europe in the next century (Bundestag 2000). In several branches an economic growth between 100 % and 250 % is already predicted for the next decade. This will cause serious pressure on the Baltic coastal zones. The scheduled extension of planning instruments towards coastal waters is urgently needed.

One result of the neglect of coastal waters is that, different to terrestrial areas, the knowledge and data for a planning and management process are still insufficient. Activities on land and on sea interact in many respects. Tourism is only one example. It has to be ensured that the coastal zone is recognised as one continuous system and treated in an integrative manner.

### **3.5 Co-operation, communication, and participation**

Due to the division of responsibilities in the coastal zone between different administrative levels, into various sectors and between land and sea, traditional deficits in co-operation and exchange between German authorities exist. There are complaints that national authorities show insufficient awareness and interest in regional aspects. Often, decisions are not made in a co-operative manner, but follow the hierarchical administrative structure.

Science has problems, too. Most research is conducted within one discipline. Intensive propagation and funding of interdisciplinary research during the last decade has improved interdisciplinary research and scientific-co-operation, but communication deficits between social, natural and law sciences are still obvious. Co-operation between authorities and science is usually limited and a continuous and systematic flow of information is lacking.

As mentioned before, Regional Planning Authorities are already the lead agencies in ICZM. In regional planning, the identification of stakeholder and public participation takes place only to a very limited degree and in a late stage. Responsible persons in Planning Authorities are familiar with administrative aspects of planning but are not well trained to integrate, discuss and moderate processes and to communicate with stakeholders and local population. All these things are imperative for a successful ICZM. Besides, there are serious doubts whether the culture of discussion in Germany is sufficiently developed to allow a successful and constructive public participation. Public participation is needed, but there are serious doubts, whether it is the key for

problem-solving in the coastal zone. Several questions need to be answered: how will the stakeholders be chosen, how to ensure the continuity of the process, who will be the moderator and how to deal with the large amount of various topics.

The coastal zone manager as a profession is not known in Germany. The need of these specially educated persons is obvious but they hardly would find an adequate job at the moment. Therefore, vocational training as well as professional training for existing staff is one important requirement.

Despite the fact that ICZM received great attention during the last decade, there is lack of awareness about the importance and positive effects in the population. One problem is the missing well defined ICZM strategy and positive examples. Especially regional ICZM projects and initiatives are important to promote ICZM and to make advantages of integrated management obvious. Right now, a vision how the coastal zones have to be developed in a sustainable manner and how the coastal zones should look like in future is lacking. Some aspects are included in regional plans, but there is the already mentioned lack of public participation in this respect. A clear vision for the future coastal zone development needs a broad discussion within the society and the participation of local population. The discussion of visions can be a good advertisement for ICZM.

One of the most important demands in Germany is the establishment of a national forum for ICZM, with regular meetings and a long-term perspective to promote the process. The forum should develop an ICZM framework including visions, a joint strategy, terminology and methodology. It should be interdisciplinary, link different stakeholders and integrate relevant of policy and administration. Below this national forum, regional forums are needed. In several meetings per year, they should deal with concrete conflicts, practical management and develop their own modified regional visions. Permanent contact persons, like regional coastal managers, are needed as moderators and to fuel and maintain the process. A permanent flow of information between all forums from regional to international has to be ensured.

### **3.6 Availability of data, information and knowledge**

Large amounts and various kinds of data have been collected for the German coastal zone. Strategies, tools and models have been developed as well. Ongoing monitoring programmes and projects steadily increase the amount of



data. The insufficient availability and lacking knowledge about the existence of this data is a problem. Further attempts are needed to link all data and information in interdisciplinary, inter-sectoral regional and national databases and a simple access is needed. The same is true for the flow of relevant information about ICZM activities. Nowadays, information depends on personal contacts and systematic distribution structures are lacking. National as well as regional newsletters, information networks or internet forums are still insufficiently developed.

### **3.7 Science and ICZM: projects and funding**

In the EC ICZM demonstration programme (EC 1999b) scientists are asked to take a more active role as a neutral moderator in ICZM processes. On the other hand, we find the reproach that especially natural scientist are too much involved in nature protection to be neutral. The possible role of scientists varies from case to case. In Germany, most ICZM-projects and initiatives are conducted by scientists. These projects are important case studies and very often the only examples for successful interdisciplinary co-operation in the coastal zone. Science is international and scientists can play an important role in transferring and applying international ICZM experience to national and regional initiatives. This is an important aspect in Germany, where an involvement of authorities in international co-operations is not well pronounced, mainly due to language problems.

Administrations and authorities complain, that scientific results from ICZM-projects are not prepared in a suitable and adequate manner, that concepts cannot be transferred and do not meet the requirements and that progress in projects is too slow for practical management requirements. These complaints clearly show that a more intensive communication and co-operation between practitioners and scientists is needed.

A general problem are different time horizons and expectations in ICZM initiatives. The progress in ICZM is slowly and requires a permanent involvement over at least several years. For scientific work in Germany, 3 years are usually the maximum funding period. This is not sufficient for the development of complex management tools or to create a self-supporting ICZM initiative. Long-term funding as well as more financial support for ICZM by the National Ministry for Education and Research is needed.

## 4 Conclusions

Integrated Coastal Zone Management is an international task, needs a European strategy and framework as well as possibilities for international research and exchange of information and knowledge. The activities and funding of the European Union in this respect are very important. Beside that, increased national activities and the creation of joint national structures as well as a national ICZM-framework are needed.

## 5 References

Deutscher Bundestag (2000). Antwort der Bundesregierung auf die Große Anfrage „Die Ostseeregion – Chancen und Risiken einer Wachstumsregion von zunehmender weltweiter Bedeutung. *Drucksache 14/4460 vom 01.11.2000.*

Erbguth, W. (2001). Raumplanung im Meer – unter besonderer Berücksichtigung des Natur- und Umweltschutzrechts. *Rostocker Beiträge zur Verkehrswissenschaft und Logistik, 12, 67-88.*

EEA (2000). Marine and Coastal Environment. Annual topic update 1999. *Topic Report 11/2000, EEA, Copenhagen.*

EUCC-International Secretariat prepared by Monod de Froideville, G, Sprink, N. and Pickaver, A. (2001). <http://www.coastalguide.org/icm/germany.html>.

European Commission (1999a). Towards a European Integrated Coastal Zone Management (ICZM) Strategy. *Office for Official Publications of the European Communities, Luxembourg.*

European Commission (1999b). Lessons from the European Commission's Demonstration Programme on Integrated Coastal Zone Management. *Office for Official Publications of the European Communities, Luxembourg.*

Gee, K., Kannen, A. and Sterr, H. (2000). Integrated Coastal Zone management: What Lessons for Germany and Europe. *Forschungs- und Technologiezentrum Westküste der Univ. Kiel, Bericht Nr. 21, p. 125.*

Obenaus, H., Köhn, J., Wenske, C. and Zuber-Seifert, F. (1999). Raumbedeutsame Nutzungen im off-shore-Bereich vor der Küste von Mecklenburg-Vorpommern. *Vorstudie im Auftrag des Ministeriums für Arbeit und Bau Mecklenburg-Vorpommern.*

Schernewski, G., Dannowski R., Humborg C., Mahlburg S., Müller C., Pollehne F., Steidl J. and Wallbaum V. (2000). Interdisziplinäre Forschung zum

Küstenzonenmanagement: Erfahrungen und Perspektiven am Beispiel der Oder. *Bodden*, 9, 73-85.

Schernewski, G. and Schiewer, U. (in press). Küstenzonenmanagement im Ostseeraum: Quo vadis? *Zeitschrift für Angewandte Umweltforschung*.

Taussik, J. (2000). Implementing Shoreline Management Strategies: The Need for Integration with Spatial Planning Systems, *Period. Biol.* 102, 391-394.

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