

Report on the Implementation of Integrated Coastal Zone Management in Germany (National ICZM Report)

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1. Introduction

In view of the growing demands on land in German coastal areas, Integrated Coastal Zone Management (ICZM) is intended to contribute to the conservation and development of coastal areas as ecologically intact, economically prosperous places for people to live. This is to be done by means of good communication, participation, and coordination between different disciplines and levels. The ICZM strategy adopted by the German Federal Government on 22 March 2006 (www.ikzm-strategie.de) and the stocktake required by the Recommendation of the European Parliament and of the Council of 30 May 2002 concerning the implementation of Integrated Coastal Zone Management in Europe (2002/413/EC) constitute the main foundations for this process. The areas of action stipulated in the strategy, such as the optimisation of legal and programme instruments, the further development of the dialogue process and the conduct of best practice projects, are currently being taken up and 'brought to life' at various levels by many actors in policymaking, administrative bodies, the business sector and civil society. The processes and activities associated with Integrated Coastal Zone Management made further progress in Germany during the years from 2006 to 2010.

This Report on the Implementation of Integrated Coastal Zone Management in Germany (National ICZM Report) has been drawn up in response to the request made in February 2010 by the European Commission, when it invited the EU's coastal Member States to provide up-to-date overviews of the progress achieved in the implementation of ICZM during the period from 2006 to 2010 on the basis of the guidelines issued by the Commission for this purpose. The point of departure was the statement made by the European Commission in its Communication of 7 June 2007 (COM(2007) 308 final) that the ICZM principles (Recommendation 2002/413/EC) continued to be relevant. The reports, which are to be submitted by the end of 2010, are intended to serve both as sources of information on the progress currently being made in the implementation of ICZM and as a foundation for reflection on a follow-up to the EU ICZM Recommendation of 2002.

This progress report explains selected measures that have contributed to the implementation of strategic goals, principles and other provisions laid down in the EU Recommendation and the national ICZM strategy during the reporting period. The report has been compiled by the German Federal Government with the involvement of the five German coastal Länder, Mecklenburg-Western Pomerania, Lower Saxony, Schleswig-Holstein, the Free Hanseatic City of Bremen and the Free and Hanseatic City of Hamburg. The basis for the report was a draft drawn up by the provisionally established Küsten-Kontor contact point, the advisory council of which consisted of representatives of the relevant federal ministries, the coastal Länder and local authority associations (German Association of Cities and Towns, German Association of Towns and Municipalities, German County Association) (www.kuesten-kontor.de). On 9 June 2010, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the Federal Environment Agency (UBA) organised a Germany-wide ICZM workshop, at which locally and nationally active coastal actors (stakeholders) in administrative bodies, the business sector and civil society were able to discuss their experiences of ICZM.

2. The ICZM process in Germany: activities and initiatives

2.1 Implementation of the national ICZM strategy by the German Federation

In Germany, ICZM is implemented in various areas and at various levels of activity. It touches upon important fields of policy, as well as technical tasks with a coastal dimension that are performed by ministries and other public authorities.

At the federal level, the following federal ministries are primarily concerned with the topic of ICZM:

- the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), which has the lead role in this field,
- the Federal Ministry of Transport, Building and Urban Development (BMVBS),
- the Federal Ministry of Education and Research (BMBF),
- the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV),
- the Federal Ministry of Economics and Technology (BMWi) and
- the Federal Ministry of Finance (BMF).

The federal ministries receive technical support from higher federal authorities such as the Federal Environment Agency (UBA), the Federal Agency for Nature Conservation (BfN), the Federal Maritime and Hydrographic Agency (BSH) and the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) within the Federal Office for Building and Regional Planning (BBR).

At the level of the German coastal Länder, Mecklenburg-Western Pomerania, Lower Saxony, Schleswig-Holstein, the Free Hanseatic City of Bremen and the Free and Hanseatic City of Hamburg, various ministries and a large number of institutions and research institutes based in the areas along the North Sea and Baltic Sea deal intensively with coastal-relevant issues within each Land (see also section 2.2).

A selection of the activities and initiatives that were important for the implementation of the national ICZM strategy from 2006 to 2010 are presented below. They are based on the areas of action that have been laid down in the national ICZM strategy.

2.1.1 Legal and planning instruments

The Act on Nature Conservation and Landscape Management entered into force on 1 March 2010. The primary goal of this act was to put in place uniform legislation on nature conservation that is enforceable throughout Germany. The law of marine nature conservation

is regulated uniformly at the federal level for coastal waters, the Exclusive Economic Zone (EEZ) and the continental shelf. In addition to earlier provisions concerning Natura 2000, the whole set of instruments offered by nature conservation law (with the exception of landscape planning) now extend to the EEZ as well. These instruments include not only statutory biotope protection and species conservation, but also the procedures used to deal with interventions in marine areas such as the installation and operation of wind farms (see *Federal Law Gazette*, 2009, Part I, No. 51, 6 August 2009, pp. 2542 ff.).

In addition to this, mention must be made of the revised Federal Water Act (WHG) of 31 July 2009 and, at the international level, Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) as the legal foundations for ICZM in the fields of water protection and marine conservation. The Marine Strategy Framework Directive is currently being transposed into national law, for which purpose the Federal Water Act is being revised once again.

The Federal Water Act, as currently constituted, has the purpose of ensuring water bodies are managed sustainably and, in this way, protecting water bodies as components of natural ecosystem functioning, the basis for human existence, habitats for flora and fauna, and resources to be exploited. Under the EU's Marine Strategy Framework Directive (2008/56/EC), all European seas are to have a good environmental status by 2020, to which end anthropogenic influences, including influences on coastal areas, are to be regulated using an ecosystem-based approach. At the regional level, in 2010 the governing bodies of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Commission) and the Convention on the Protection of the Marine Environment of the Baltic Sea Area (HELCOM) presented their latest assessments of the status of the two seas, which were prepared with German participation. In doing so, they made the first international contributions to the implementation of the Directive.

The following may be mentioned as examples of further ICZM-relevant measures:

- the notification of a total of 950,000 hectares of special areas of conservation under the Habitats Directive, a total of 500,000 hectares of bird protection areas in the German EEZ, and a total of just over one million hectares of bird protection areas in German coastal waters to the EU;
- the integration of the majority of these sites into the OSPAR and HELCOM networks of protected areas;
- the recognition of the Schleswig-Holstein and Lower Saxon Wadden Sea as a UNESCO World Natural Heritage Site.

The Federal Regional Planning Act (ROG) extends the scope for the application of spatial planning to the EEZ. This is currently based on Section 17(3) of the Federal Regional Planning Act as revised in 2008. It stipulates that the spatial plan for the EEZ should contain provisions concerning

- economic and scientific uses,
- guarantees for the safety and ease of shipping traffic, and
- the protection of the marine environment.

The spatial plans for the German EEZ in the North Sea and Baltic Sea were drawn up in late 2009 by the Federal Ministry of Transport, Building and Urban Development (BMVBS), with input from the federal ministries that bear technical responsibility, and were enacted by ordinances (*Federal Law Gazette*, Part I, No. 61, p. 3107; *Federal Law Gazette*, Part I, No. 78, p. 3861). The Federal Maritime and Hydrographic Agency (BSH) conducted the preparatory stages of the procedure. A strategic environmental assessment formed the foundation for an environmental report, which ascertained possible positive and negative consequences of the plans for the marine environment, and examined and assessed significant impacts in depth. With these plans, the German Federation assumed the function of concrete overall spatial planning for the EEZ for the first time, a move that was also consistent with the ICZM philosophy. The spatial plans for the German EEZ in the North Sea and Baltic Sea play a major role in the context of ICZM. On account of the existing density of land-use and the demands being placed on the German EEZ (e.g. shipping traffic, the extraction of raw materials, pipelines and submarine cables, academic marine research, energy generation, wind energy in particular, fishing, mariculture, environmental protection and nature conservation), which will increase yet further in future, the aim was to defuse conflicts and competition, and develop solutions for the sustainable use of marine areas, including the protection of the marine environment.

For instance, the current plans, which date from 2009, define priority areas for shipping and wind energy, at the same time as ruling out wind farms in NATURA 2000 areas.

The activities discussed in the field of nature conservation and spatial planning show that ICZM principles have been incorporated into the action taken at the levels of both legislation and enforcement in Germany.

Further evidence of how broadly ICZM is anchored in Germany is provided by the fact that two fields of action, coastal development and coastal management, are now reflected in important development strategies, plans and programmes adopted by the German Federal Government. Examples include the National Strategy on Biological Diversity (2007), the German Strategy for Adaptation to Climate Change (2008), the National Marine Strategy (2008) and the Maritime Development Plan within the Framework of an Integrated Maritime Policy for the EU that is currently being drawn up under the leadership of the Federal Ministry of Transport, Building and Urban Development.

2.1.2 Improvement of information and communication processes

The Küsten-Kontor pilot project played a prominent role in the further development of information and communication processes. The Küsten-Kontor was a product of the research project Conception and Implementation of an Inter-Länder ICZM Cooperation Process, which had been initiated in August 2008 by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Environment Agency. It carried out interdisciplinary, cross-thematic work as an impartial facilitator. All important stakeholders from policymaking, governmental organisations, the business sector, the academic community and civil society were involved. A project advisory council actively supervised the process. It comprised representatives of the federal ministries concerned, the five German coastal Länder and the three local authority associations. The advisory council participated actively in the drafting of the national progress report. The Küsten-Kontor pilot project closed at the end of 2010. At present, options for the continued operation of the Küsten-Kontor are

being reviewed. The Küsten-Kontor took the fundamental philosophy of ICZM forward by providing information as an inter-Länder contact point, offering advice, building up networks, mediating and promoting cooperation between coastal actors. In this way, it made an important contribution to the environmentally benign, economically productive and socially just development of coastal areas.

In 2006, the Federal Environment Ministry and the Federal Environment Agency set up a continuously updated Internet site (<http://www.ikzm-strategie.de/>) in order to provide information about the ICZM activities undertaken by the EU, the German Federation, the Länder and non-governmental organisations on an ongoing basis.

The German coasts along the North Sea and Baltic Sea are designated as key regions under the BMBF Framework Programme Research for Sustainable Development (<http://www.bmbf.de/en/2559.php>). An expert group commissioned by the BMBF is currently drawing up a concept for future coastal research in the North Sea and Baltic Sea. One essential aspect of this concept will be the initiation of projects that flank and support the ICZM process by bringing new knowledge to bear. The activities of the Coastal Engineering Research Council (KFKI, www.kfki.de) will be integrated into the concept. The competent administrative bodies of the German Federation and the Länder that are active in coastal research cooperate on the Council. One essential function of the KFKI is its research into the recording and prediction of natural processes on the coast and in the coastal zone. This is intended to enable the administrative bodies the Council brings together to carry out the functions incumbent upon them in a purposeful, prudent and environmentally sound way, i.e. sustainably. The performance of these functions is also relevant to ICZM.

2.2 Implementation of the national ICZM strategy by the Länder

Today, the ICZM principles are also a permanent component of the various coastal-relevant programmes and plans put in place by the Länder.

Germany has had a wide-ranging planning system with sophisticated, comprehensive spatial planning and Land-level planning for a long time. It has been possible for ICZM ideas and approaches to be incorporated without major problems into the 'formal' German planning system, with its extensive participation processes. The coastal Länder are charged with integrating their parts of Germany's coastal waters into their own spatial planning activities. Over the last few years, they have sought to do this above all by putting forward spatial planning and Land-level planning programmes, plans and concepts that have been supplemented with aspects of ICZM.

2.2.1 Mecklenburg-Western Pomerania

Section 6(1) of the Act on Spatial Planning and Land-Level Planning of the Land Mecklenburg-Western Pomerania (LPIG) has been amended as follows: 'The Land Spatial Development Programme shall set out the targets and principles of spatial planning and Land-level planning that relate to the whole Land, including its coastal waters [...].'

The Land Spatial Development Programme (LEP M-V) enacted by a Land ordinance contains a separate chapter on ICZM. Not only is ICZM mentioned explicitly as an instrument in the LEP M-V, the coordination the Programme requires in coastal waters is already making a concrete contribution to the implementation of the ICZM approach. Preparations are currently being made for the parts of the LEP M-V that relate specifically to coastal waters to be updated. Thanks to the Land Spatial Development Programme, the ICZM approach is firmly anchored as a strategic instrument in Mecklenburg-Western Pomerania. Alongside the cross-cutting, interdisciplinary spatial development planning carried out for marine areas, the Spatial Planning Procedure (ROV) is of particular significance as an instrument for the project-based, intersectoral coordination of individual projects. This too is being used to achieve the goals of ICZM.

Furthermore, regional spatial development programmes have been established for Western Mecklenburg, Central Mecklenburg/Rostock and Western Pomerania. Extensive participatory procedures ensure compliance with the ICZM principles of transparency, public participation, interdisciplinary cooperation and coordination.

Selection of examples:

- **PlanCoast Project**
Recommendations for action to promote integrated offshore spatial planning/integrated coastal zone development; various expert reports drawn up in the light of the coastal elements of the Spatial Development Programme: marine raw materials, fishing, wind power and priority nature conservation sites as they relate to nature conservation concerns and other spatial uses.
- **VASAB Cooperation** (Baltic-wide recommendations on ICZM and offshore spatial planning).
- **Construction in Water Manual:** This manual was drawn up at the initiative of the spatial planning authorities in collaboration with other ministries and local authorities. The objective was to control construction activity in and on the water by identifying exclusion zones delimited on the basis of nature conservation criteria and other sensitive areas, therefore avoiding conflicts between different types of use in the coastal zone.
- **Pleasure Craft Harbours on the Outer Coast of Mecklenburg-Western Pomerania:** Suitability of Sites for the Construction of Marinas on the Basis of Studies of Sediment Transport. Dynamic coastal processes and the appraisal of sediment transport capacities were taken as the starting point for the assessment of sections of coastline to ascertain their fundamental suitability for the construction of pleasure craft harbours, and the threats such developments would potentially pose to protective measures against storm surges and coastal defence structures. The report supported the Business Location Strategy for Water Sports Facilities/Pleasure Craft Harbours on the Baltic coast. It was intended to assist the efforts to avert conflicts with other spatial uses and nature conservation activities in the coastal zone, at the same time as drawing attention to the opportunities for sustainable maritime tourism.

Alongside this, projects on climate protection and ICZM are currently being conducted at the regional planning level by the Western Mecklenburg and Western Pomerania regional planning associations (MORO, INTERREG).

- MORO project Western Mecklenburg
The INTERREG project BalticClimate – Baltic Challenges and Chances for local and regional development generated by Climate Change, which is due to run until the end of 2011, is examining the consequences, risks and opportunities of climate change for the Baltic Sea area. Under BalticClimate, 25 project partners from eight states around the Baltic Sea are investigating, among other things, the likely consequences of the rise in sea levels that is to be expected in the course of climate change. The Western Mecklenburg Regional Planning Association is coordinating the activities in the German model region, Western Mecklenburg.
- Model Spatial Planning Project (MORO): Spatial Development Strategies for Climate Change in the Western Pomerania Planning Region
The Western Pomerania Planning Region is one of eight regions that were selected by the Federal Ministry of Transport, Building and Urban Development in June 2009 for the investigation and trialling of new spatial development strategies for climate change. As the only coastal region in this model project, it is devoting particular attention to the impacts of climate change on the coastal zone, with all the diverse uses that impose demands on it (including the physical regional features of the coastal and Bodden landscape, tourism and recreation, landscape water balance), as it elaborates its spatial development strategy.

2.2.2 Lower Saxony

A first building block of the Lower Saxon ICZM strategy was developed in 2005 with the Spatial Planning Concept for the Lower Saxony Coastal Waters (ROKK). The intention was to build on the Concept to implement ICZM permanently in Lower Saxony. To this end, the Lower Saxon Act on Spatial Planning and Land-Level Planning (NROG) as promulgated on 7 June 2007 (*Niedersächsisches Gesetz- und Verordnungsblatt*, p. 223), the Land Spatial Planning Programme Lower Saxony (LROP) as promulgated on 8 May 2008 (*Niedersächsisches Gesetz- und Verordnungsblatt*, p. 26) and the principles and goals for the integrated development of coasts, islands and the sea set out in these instruments form the basis of the Lower Saxon strategy.

The establishment of a Lower Saxon ICZM information platform is part of the Lower Saxon strategy and is intended to support the actors in coastal areas in their planning activities. It provides information about major projects, plans and processes relevant to ICZM in the coastal zone (http://www.ml.niedersachsen.de/live/live.php?navigation_id=1566&article_id=5223&psmand=7link.plattform).

Apart from the integrated management plans for the Weser and the Elbe that are being drawn up, an integrated management plan, in which ICZM principles will be applied, is now also being drafted for the Ems in coordination with the Netherlands.

The **KLIFF project** (Climate Impact and Adaptation Research in Lower Saxony, www.kliff-niedersachsen.de) is examining strategies for adaptation to climate change and is funded by the Lower Saxon Ministry for Science and Culture. It brings together academics working in various disciplines: agriculture and forestry, biology, geography, engineering, marine research, meteorology, spatial planning, social sciences and economics. One example of the project's work is the **A-KÜST sub-project** in the Ems-Dollart region, where the changes expected in the demands on existing coastal protection structures are being calculated for a prescribed range of climate change scenarios. The scale, functionality, and technical and economic feasibility of the measures derived from these calculations are being assessed. In addition to this, the intention is to study strategic alternatives to conventional coastal protection: partial retreat and gradual retreat during the first stage, adaptation in the areas that are then exposed to storm surges during the following stage and, finally, complete retreat from areas threatened by storm surges. Alternative strategies are also being studied to ascertain how the population in the coastal zone will be affected by threats to parts of areas of economic activity, the total loss of such areas or temporary restrictions on regional mobility. This will provide political and administrative decision-makers with the information they need to lay sustainable foundations for future human existence in coastal areas. In line with the ICZM philosophy, the development and feasibility of adaptive strategies have been discussed in close contact with stakeholders, actors, policymakers and the academic community from the very beginning.

Under the INTERREG IV B transnational European funding programme (see section 2.4), Lower Saxony is supporting a series of ICZM-relevant projects within the North Sea and Baltic Sea cooperation areas. These projects can also be found on the Lower Saxon ICZM information platform, where information is provided about the substantive issues they are addressing and the work they are doing.

2.2.3 Schleswig-Holstein

The Schleswig-Holstein Land Development Plan 2010 (LEP) entered into force at the beginning of October 2010 and contains special provisions on coastal waters and integrated coastal zone development that are binding on all public planning bodies. These provisions were based on, among other things, the Spatial Planning Report Coast and Sea 2005 (www.landesplanung.schleswig-holstein.de), which identified potential conflicts and approaches to action in Schleswig-Holstein's coastal waters and the EEZ.

Mention is to be made of the Maritime Action Plan Schleswig-Holstein 2008 as particularly ICZM-relevant. The Plan was drawn up as part of the Initiative Sea our Future of the Land Schleswig-Holstein (www.zukunft-meer.schleswig-holstein.de) and contains the central guidelines applied by the Land government of Schleswig-Holstein as it implements its innovative, integrative marine policy, as well as conveying insights into the concrete ongoing and future activities and measures of the Land government in the maritime field. At the beginning of 2010, the Land Schleswig-Holstein launched a competition, Come Enjoy the Sea (see section 2.4), which has been integrated into the Maritime Action Plan.

2.2.4 Bremen

The City of Bremen sees a 'bottom-up approach' to Integrated Coastal Zone Management with a regional and, more importantly, a strong local focus as a suitable instrument with which to flag up potential conflicts, approaches to the resolution of problems and possible developments at an early stage. In view of the increasing demands on land attributable to the development of Bremen's ports and shipping traffic, the efforts to ensure the sustainable protection of the coastal and marine environment are of elementary significance for Bremen. As a city state, Bremen cooperates closely on ICZM-relevant projects with the neighbouring Land, Lower Saxony. In consequence, the Lower Saxon ICZM information platform also features all the main projects, plans and processes with ICZM relevance on which Bremen and Lower Saxony are collaborating. One example is the integrated management plan for the Weser Estuary and the Lower Weser that is currently being implemented and will sound out the scope for future action and development opportunities using interdisciplinary methods compatible with ICZM.

2.2.5 Hamburg

Only a small proportion of North German coastal waters fall within the territory of the Free and Hanseatic City of Hamburg. Nevertheless, with its sea port and its commercial maritime infrastructure, Hamburg is involved in various projects that relate to ICZM and offshore planning. Hamburg has not adopted any specific, legally binding ICZM programmes or plans. However, the ICZM philosophy of identifying potential developments and possible conflicts at an early stage, and making better use of existing synergies is reflected in many areas of official action. Several concrete examples may be mentioned here: the concept put forward for the Tidal Elbe by the Hamburg Port Authority (HPA) (www.tideelbe.de), the creation of the integrated management plan for the Elbe Estuary in cooperation with the neighbouring Länder, Lower Saxony and Schleswig-Holstein (www.natura2000-unterelbe.de) and the INTERREG IV B TIDE project, for which the HPA is lead partner (www.tide-project.eu). TIDE has the goal of developing an integrated planning and management concept for the Elbe, Weser, Schelde and Humber estuaries.

2.3 Measures taken by other institutions concerned with ICZM

New communication and information instruments (e.g. NOKIS, see section 2.4; the EUCC Germany information module on marine and coastal tourism) facilitate reporting on individual projects. The establishment of various databases by the Maritime and Hydrographic Agency (BSH), EUCC Germany and other organisations has improved stakeholders' access to ICZM-relevant information. These initiatives offer a basis for the further dissemination of academic findings and transfers of information.

The creation of the Küsten-Kontor (see section 2.1) improved horizontal and vertical cooperation between the Federation, the Länder and the local authority associations.

The Trilateral Wadden Sea Cooperation (TWSC) and the Wadden Sea Forum (WSF) both work on the basis of ICZM principles. They demonstrate how valuable the building of networks and intersectoral exchanges of information and knowledge are for the sustainable

development of the coastal region and the protection of the Wadden Sea. For instance, the TWSC, which was founded as a cooperation between the governments of the three Wadden Sea states, the Netherlands, Germany and Denmark, has used cross-border collaboration to contribute to the sustainable protection of the whole Wadden Sea with joint guidelines and objectives since its early stages. In this respect, the Wadden Sea Plan forms a conceptual framework for the integrated management of the Wadden Sea at the policy level. The founding of the Wadden Sea Forum (WSF) by the TWSC in 2002 involved the various stakeholders and regions within the trilateral coastal area in the process of integrated management. Over the years, the WSF has become an established stakeholder forum with a working level that allows all relevant sectors and the administrative and political levels to be represented. This unique structure and the cooperation that takes place across national borders facilitate valuable flows of information and exchanges of knowledge, processes that are conducive to the necessary harmonisation of spatial uses in the Wadden Sea region, conservation standards and the fulfilment of EU requirements.

In 2008, a Memorandum of Understanding was concluded between the TWSC and the WSF in order to strengthen cooperation between the policymaking level and the representatives of regional interest groups, and consolidate the Wadden Sea Plan as a shared foundation for action. Under this arrangement, the WSF acts as a consultation partner in political decision-making processes that relate to the sustainable development of the Wadden Sea region, ICZM, and marine plans and activities. The establishment of links between politics, socioeconomics and nature conservation creates a significant and successful structure that allows ICZM to be implemented at the interregional and cross-border levels, and has model character in Europe.

The Wadden Sea region, including the EEZ, is going through a process of rapid development with direct and indirect consequences for the trilateral protected area and, consequently, the Wadden Sea World Heritage Site. Examples include the growth of shipping traffic, the development of tourism, coastal defence measures and the rapid expansion of onshore and offshore energy production. As these developments unfold, cross-border cooperation between policymakers and stakeholders will have to be accorded particular significance if the coastal region is to be developed in environmentally sound directions and the World Heritage Site protected for our future on the basis of the Wadden Sea Plan.

It is not possible for this progress report to look at all ICZM-relevant initiatives and (research) projects – some of which are also funded by towns and municipalities.

2.4 Concrete successes illustrated by selected model projects

The Federation and Länder successfully implemented a range of ICZM projects during the reporting period. A selection of these projects, which are distinguished above all by their great thematic diversity, are discussed briefly below. This list does not make any claim to exhaustiveness. Other important and interesting projects can be found on the Internet site <http://www.ikzm-strategie.de/ikzm-deutschland.php>. Germany has submitted more than 30 case studies for inclusion in the database created under the EU OURCOAST project, which is designed to promote international discussion of examples of good practice and suitable instruments.

The Leibniz Institute of Ecological and Regional Development Dresden and the Leibniz Institute for Baltic Sea Research Warnemünde were commissioned by the Federal Environment Agency to conduct the research project **ICZM: Prudent and Efficient Land Consumption in the German Coastal Areas** from 2007 to 2010. The aim of the project was to apply the ICZM approach in developing practical strategies, instruments and measures for prudent, efficient land management in the onshore coastal strip. Four case studies in different German coastal Länder were used to highlight the options for action to influence land consumption in coastal areas. The project therefore worked towards the goal set in the National Sustainability Strategy of reducing daily land consumption in Germany from its current rate of approximately 94 hectares (mean value for the years 2006-2009 according to figures released by the Federal Statistical Office in 2010) to 30 hectares by 2020. The report covers planning strategies and instruments that can be successfully deployed in the context of local and regional ICZM processes.

The Michael Otto Foundation conducted a project on the **Consequences of Climate Change for the Wadden Sea Region** in cooperation with the Federal Agency for Nature Conservation. Workshops were held with nature conservation and coastal protection experts to seek alternative scenarios with the goal of integrating the conservation and development of nature, landscape management and coastal protection. To date, the conception of broadly acceptable, strategic scenarios that set out alternatives to conventional methods has proved to be difficult. This prompted the publication of a brochure intended to encourage debate about what a climate-safe Wadden Sea region would look like, which was produced with the involvement of the relevant coastal actors.

Another project, **German Port Development on the North Sea and Baltic Sea Coasts and the Need for Spatial Planning Action**, was conducted by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) from October 2007 to October 2009. It studied the need for spatial planning activities when ports are developed and the potential for development offered by ICZM in this field. The project was based on a dynamic systems approach to the depiction of interactions in port use and development, as well as an analysis founded on case studies of the ports at Brunsbüttel, Rostock and Hamburg. Recommendations for action are set out in the project report.

The **RADOST** programme (Regional Adaptation Strategies for the German Baltic Sea Coast, <http://klimzug-radost.de/>) is funded under the Federal Ministry of Education and Research's KLIMZUG (Managing climate change in the regions for the future) funding activity. RADOST was launched in July 2009 and will continue until June 2014. Its aims are to use adaptation strategies to minimise the negative consequences of climate change for the Baltic Sea region, make the best possible use of development opportunities, and strengthen networks and channels of communication across the region and beyond. Under the programme, dialogue is also being cultivated with international partner regions in Denmark, Latvia, Finland and Poland, for instance. The RADOST project structure distinguishes between various modules: Network and Dialogue, Natural and Engineering Science, Socioeconomic Analysis, National and European Political Setting/National and International Exchange, and Communication and Dissemination of Results. Furthermore, cross-networking is facilitated by higher-level dialogue forums and the involvement of focus areas.

NOKIS (North Sea/Baltic Coastal Information System, www.nokis.org/) is an online portal that has been created jointly by representatives from the fields of coastal protection, water management, nature conservation, waterways engineering and research to make

standardised data and information about the coastal zone available. The project ran from August 2005 to June 2008, and was funded by the Federal Ministry of Education and Research (BMBF), Project Managing Office Jülich, the Coastal Engineering Research Council (KFKI) and other partners. The NOKIS portal offers users a shared stock of interdisciplinary, virtual metadata, which it is possible to search using targeted, contextualised criteria. This system is also intended to overcome the narrow, sectoral view of specialised information systems.

The **Coastal Futures** project (www.coastal-futures.de), which ran from April 2004 to March 2010, researched the interactions between various spatial uses in coastal areas and how those uses interact with conservation concerns on the western coast of Schleswig-Holstein. The project was centred on the offshore generation of wind energy, fishing and their interactions against the background of the principles of sustainability. The Federal Ministry of Education and Research (BMBF) funded this project, which was coordinated by the GKSS research centre at Geesthacht.

The **ICZM-Oder** project (www.ikzm-oder.de), which was launched in May 2004, has now been concluded as well. This project was also funded by the BMBF, was coordinated by the Leibniz Institute for Baltic Sea Research Warnemünde, and supplied information and advice for cross-border coastal zone management in the German-Polish Oder Estuary region. In this respect, the focus lay on the development of concepts for sustainable tourism in the region. The results of the project have been incorporated into the Coastal Information System Oder Estuary.

The Federal Environment Ministry and the Federal Environment Agency are funding a competition held by the Schleswig-Holstein Ministry of the Interior, **Come Enjoy the Sea**, which seeks to celebrate model projects aimed at creating a vibrant coastal zone with a strong future along the North Sea and Baltic Sea coasts of Schleswig-Holstein (www.lustopdatmeer.de). The five winning model projects address new challenges such as climate change, and concrete regional issues such as innovations in coastal defence (dyke reinforcement and tourism), the redevelopment of port areas, the creation of a climate-friendly mobility infrastructure and the protection of beaches from erosion. The goal is to identify the potential and opportunities offered by integrated coastal zone development, implement ICZM in practice on the ground with the participation of relevant actors, and promote cooperation between local authorities and various technical disciplines. The projects are intended to have an exemplary function for coastal regions with similar structures and supply inspiration to other German coastal Länder. The processes in the trial regions will be supervised technically until mid-2011 by an external agency and communicated continuously to the public.

In the context of Objective 3 of the EU's regional policy, the European Union is using financial resources from the **European Regional Development Fund (ERDF)** to finance transnational cooperation directed towards integrated territorial development (INTERREG IV B). During the current funding period from 2007 to 2013, Germany is taking part in five programme areas dedicated to transnational cooperation. The Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) has set up a website about the EU's INTERREG IV B funding programme (www.interreg.de). Among other things, the coastal cooperation areas draw attention to the goals for the promotion of forward-looking environmental management and the use of the seas as a shared resource. There is a series

of projects in these areas that deal with ICZM themes and take them forward in an exemplary fashion. A few projects are discussed below:

- **BLAST** (Bringing Land And Sea Together) – This project is focussed on providing support for ICZM through the expansion and harmonisation of the data stock with geoinformation about the transition zone between land and sea.
- **CPA** (Climate Proof Areas) – The goal of this project is to develop strategies and concepts for adaptation to the possible consequences of climate change in various regions of the southern North Sea area.
- **MARE** (Managing Adaptive Responses to changing flooding risk in the North Sea Region) – The goals of this project are to set criteria and standards for urban areas threatened by flooding and use them to elaborate concrete approaches for action that will allow incidents to be managed and averted. This will be done on the basis of a Strategic Climate Proofing Toolbox that still needs to be developed.
- **SUSCOD** (Sustainable Coastal Development in Practice) – The most prominent element of this project is the development of a Web-based instrument for practitioners who are working in the field of coastal development and coastal protection.
- **TIDE** (Tidal River Development, www.tide-project.eu) is concentrating primarily on estuaries in the North Sea region that are heavily influenced by tides, are subject to protection under the European directives and serve as approaches to important sea ports. TIDE is seeking to summarise what has been learned about the functioning of estuaries and their ecosystems, and identify gaps in scientific knowledge. The intention is to apply these findings to identify what are currently the best management approaches. The findings are to be communicated to a broad public both in Germany and at other European estuaries. Hamburg, Lower Saxony, Bremen, Belgium, the Netherlands and the United Kingdom are participating in this consortium project.

2.5 Obstacles to and experience of ICZM implementation

Over the last few years, various activities have been initiated at all levels in Germany that are of particular significance for the attainment of the goals of ICZM. The planning practice established in Germany constitutes a platform for the application of important ICZM principles. The following discussion describes and draws together the experience gathered over the last few years by the actors that have engaged with ICZM, and their views about the approach. In this respect, attention is paid not just to the national level (German Federation, Länder and local authorities) but to the EU level as well.

Many coastal actors in Germany see a greater need for coordination as far as the EU instruments are concerned. For instance, it is argued that the EU's ecosystem approach, which not only provides the basis for the ICZM Recommendation but also for the Marine Strategy Framework Directive and is to be taken into consideration in accordance with the EU roadmap for Maritime Spatial Planning, should be harmonised with the EU's principle of sustainability. Much the same is true of the EU's sector-oriented strategies, which ought to be compatible with the goal of sustainability and the ecosystem approach. In this respect, internally consistent, standardised terminology with unambiguous definitions of the terms

used at the EU level, and improved cooperation, coordination and coherence would be desirable because they would help to clarify any questions about competences and powers. This would also prevent the competent authorities in Germany from arriving at different interpretations of the measures taken and successes achieved during the implementation of the ICZM strategy. The Küsten-Kontor's interministerial, inter-Länder project advisory council made it possible to establish a reciprocal, transparent and continuous exchange of information between the various ministries. Despite the ending of the project itself, this may constitute the basis for further exchanges of information.

One important task is to draw sufficient attention to the cross-border, European dimension of the implementation of ICZM, and provide actors and the public with better information about existing forms of cooperation, such as the INTERREG projects. It is also possible to conclude from the experience gathered during the reporting period that the commitment shown by the Federation and the Länder to the ICZM-relevant initiatives that have come from the EU and other international organisations and networks (e.g. HELCOM, OSPAR and VASAB) has proved constructive for all decision-making levels.

Some actors and institutions are asking for support from the German Federation that goes beyond the ICZM initiatives undertaken to date. It is argued that the effective implementation and promotion of ICZM principles should be viewed as a national function. This would enable ICZM to boast of greater successes and grow in significance. Furthermore, contacts with the actors on the ground could be intensified, as ICZM in Germany is still far too 'research heavy' in many cases.

As a consequence of the different competences and areas of responsibility assigned to the Federation and the Länder, those concerned still concentrate too much on their specific technical goals without sufficiently coordinating their handling of substantive issues and interests from the very beginning. In this respect, with the exception of the fields of spatial planning and Land-level planning, the interaction and communication, both between and within formal structures and informal processes, that would allow ICZM to take effect as a holistic concept have still not evolved to an adequate degree. Hitherto, certain projects have only made an impact locally, regionally or in a particular Land and not across Land borders. It would be more effective to exchange results between disciplines, across boundaries and between different levels as well. This would allow the partners to benefit mutually from each other's experience. There therefore continues to be a need to enhance cooperation on ICZM at the national and international levels, i.e. it is still necessary to establish a coherent national focus for the subtargets and individual measures adopted within an overall German ICZM conception. Certainly, this would be sensible as a way of developing suitable mechanisms for the generation and exploitation of appropriate synergies in coastal areas while drawing on individual experiences in an iterative process. Apart from a standardised framework, it is just as important for the further implementation of ICZM to enhance the exchange of knowledge and information, as well as the communication between regionally anchored projects and initiatives along the North Sea and Baltic Sea coasts. Action to foster networking at the interfaces in these areas is a national, coastal-related function that transcends the borders between the Länder.

Fears that ICZM will interfere with formal decision-making processes and could therefore establish itself in competition with Germany's established formal planning and approval procedure have proven not to be justified. The coexistence of informal and formal

instruments needs to be developed in Germany, and requires further trialling, especially with a view to the exploitation of synergies.

In many cases, the formal spatial planning procedures in Germany already contain ICZM-relevant elements. Although various positive experiences of these elements have already been gained, they are not always labelled as ICZM. It follows from this that it is still necessary to raise awareness even further about the substance of ICZM. In addition to spatially based planning, ICZM-related elements are also to be incorporated into other legally anchored instruments and procedures, such as contract-based nature conservation activities, plans for spatially demanding infrastructure projects, environmental sectoral planning, economic management instruments, the promotion of economic development, regional structural policy, etc.

In addition to structural and organisational issues, different technical and substantive perspectives and approaches to conflict resolution can cause difficulties for the implementation of ICZM in Germany. For instance, ICZM involves many actors from various disciplines with their own instruments and procedures, and it is not always easy to integrate them smoothly into decision-making processes.

Again and again, the question of the 'added value' generated by ICZM is the subject of critical analysis among the actors at the grassroots, in particular against the background of what is generally a very tough financial situation for the Länder and local authorities, and the increasing pressure for consolidation to which this gives rise. The goal will therefore continue to be to explain the advantages and necessity of ICZM using examples from practice and model projects – thus setting examples for other coastal regions.

In view of competing interests for land and resources in coastal areas, it should be pointed out how the pressures of land use can be looked at across the divisions between discrete spaces and sectors, potential developments and possible conflicts identified at an early stage, and existing synergies better exploited (proposals for 'win-win' solutions). For example, one typical challenge on the coast is how to expand the use of onshore and offshore wind energy, which will require systems for the transmission of the power that is generated and, at the same time, measures to achieve the goal of prudent, environmentally acceptable levels of land consumption.

The case studies conducted in the course of various research projects show that there is nothing automatic about the implementation of the ICZM approach, especially the involvement of regional actors. Rather, ICZM requirements need to be taken into consideration at the conceptional level from the very beginning to achieve the goals of these projects and promote understanding and acceptance of ICZM concerns among the actors.

Certainly, experience indicates that the prospects for the successful implementation of ICZM are particularly good when the following guiding principles, which the Küsten-Kontor project advisory council (see above) formulated at its 6th meeting in early 2010, are incorporated into the projects in question:

- Committed visionaries are drivers for Integrated Coastal Zone Management.
- The action taken should be guided by our society's values and goals, while ICZM should be implemented purposefully and pragmatically.

- Intersectoral thinking and action are preconditions for integrated, sustainable solutions.
- Specific, concrete objectives are required for the success of the process.
- Appropriate involvement of stakeholders is important for informal discourses.
- The implementation of integrated coastal zone management should be practically oriented, while academic findings must be made available.
- Coastal zone management is to be conceived as a long-term process and ongoing function.

3. Assessment of progress

As set out in section 2, diverse measures for the promotion of sustainable development on the coast were set in train or actually implemented during the period from 2006 to 2010. It is to be noted that the ICZM process made good progress during the reporting period in Germany, that various milestones were reached and that ICZM principles are already being applied to a certain extent. Nevertheless, there will also be a need for action in future in order to safeguard what has so far been achieved over the long term, optimise instruments and procedures or adapt them to new challenges, and ultimately achieve the goals to which the national ICZM strategy aspires in the various fields of action. In addition to this, the iterative character of the ICZM process demands that the targets set should be revised at certain time intervals to take account of the progress that has been made. This applies for all levels of action.

3.1 Challenges for sustainable coastal development

Drawing on their experience of the ICZM process since 2006, the participating actors in Germany see a series of future challenges for sustainable coastal development that will have to be taken into consideration in any follow-up activities.

As regards the further management of the ICZM process, the aim should be to make increased use of the existing organisational structures and instruments at the national, regional and local levels and, when doing so, to involve the business sector even more effectively. The results achieved to date and examples of successful implementation in Germany should be communicated to the public with greater clarity. Apart from measures to convey the added value and benefits gained from the application of ICZM principles, this will involve the funding of training courses on ICZM.

The European Commission should seek to ensure that ICZM and other relevant marine and coastal-related initiatives are networked more strongly with one another. This relates above all to their integration into the EU's Integrated Maritime Policy (IMP). The linkage between MSP (for which the Directorate-General for Maritime Affairs and Fisheries is responsible) and the informal ICZM approach (for which the Directorate-General for the Environment is responsible) envisaged in the Proposal for a Regulation of the European Parliament and of the Council establishing a Programme to support the further development of an Integrated Maritime Policy is regarded and advocated as a first step in this direction. It is just as welcome that, in the impact assessment it has initiated, the European Commission will review the options for the further development of Maritime Spatial Planning in conjunction with the options for ICZM (see the EU communication Maritime Spatial Planning in the EU – Achievements and Future Development of December 2010). If such a linkage is established, care will be required in order to ensure that the informal, voluntary approach characteristic of ICZM is preserved. Further EU activities must be aimed at eliminating any confusion about the definitions of terms. This would make a concrete contribution to coherent implementation in the Member States.

Compliance with the subsidiarity principle should continue to be emphasised at the EU level, as well as at other superordinate levels. This is to be seen above all against the background of the fact that the number of ICZM initiatives at the various governmental and administrative levels is increasing, while German institutions have demonstrated their commitment and competence when it comes to the implementation of initiatives of this kind.

The German Federal Government sees particular need for action when it comes to various ICZM-relevant issues. For instance, attention should also be paid to new challenges such as climate change, its consequences and the adaptive measures that will be required, in particular with regard to coastal defence. Reference is made, for example, to the Lower Saxon A-KÜST project, which is part of the KLIFF programme (see section 2.2.2), and the Tidal River Development (TIDE) project on the Tidal Elbe (see section 2.4). The sustainable use of resources and onshore and offshore sites is also an increasingly important topic. Other problems that need to be taken seriously include the nutrient and contaminant loads in water bodies and sediments, which originate in the river catchment areas and cause marine eutrophication, as well as the pollution of seas and marine sediments with contaminants. Furthermore, they are a crucial factor in the oxygen problems that affect some estuary waters during the warm season, while the contaminant levels in sediments cause problems for the maintenance of shipping channels. Further topics include erosion on coastlines and beaches, onshore and offshore traffic, and the continuing development of the port industry (on this issue, see the research programme KLIWAS – Impacts of climate change on waterways and navigation – Searching for options of adaptation, www.kliwas.de).

The topic of ‘the coast as an energy region’ (e.g. onshore and offshore wind farms, international undersea cable links, coal-fired power stations, CCS technology, marine energy) is associated with potential new conflicts, but also with opportunities that it is necessary to address collectively.

The issues that have been discussed make it clear that an increase in the pressures exerted by competing spatial uses on the German North Sea and Baltic Sea coasts is to be expected. At the same time, this will be accompanied by a greater need for discussion and coordination if sustainable solutions are to be arrived at for coastal areas as ecologically intact, economically prosperous places for people to live. As far as this is concerned, the involvement of regional actors and the question of acceptance will be increasingly important. In this connection, ICZM, based as it is on the principle of sustainability, will also have great significance in future as an informal instrument that supplements the formal MSP approach in the transition zone between land and sea.

In future, social and economic aspects will move even more to the centre of attention (coasts as natural habitats that simultaneously have to be sustainable economic locations and places where people live). Demographic change and the resulting consequences for coastal regions also need to be incorporated into the models as future parameters.

The implementation of many ICZM measures, including the further operation of the Küsten-Kontor ICZM contact point, which was built up as a pilot project, will confront the participating actors with particular challenges connected with the question of funding. Institutions at the national and international levels should review whether granting funding more rapidly and unbureaucratically, with higher funding rates for public sector and private applicants (e.g. from LIFE+), could help to improve the implementation of the ICZM approach.

3.2 Future potential of sustainable coastal development

In the light of the goal of sustainable coastal development, the German actors have diverse options for the further development of the existing ICZM process. In this respect, it is necessary to distinguish between various perspectives: EU activities, the continuing ICZM process in Germany and the implementation of individual measures on the ground.

Cooperative arrangements between the competent authorities in EU Member States with different degrees of ICZM implementation are regarded as helpful (e.g. using methodologies that emulate existing twinning projects in the EU accession candidate countries). Above all, international, cross-border approaches to the resolution of problems and coordinated action on the North Sea and Baltic Sea coasts will support the progress made in these regions. As an example, action to safeguard ports and transport routes is being discussed in Germany, something that is indeed not just of significance for one nation state, but also interacts with what is happening in other states in Central Europe. If ICZM is to be further established across the board, greater stress needs to be placed on its informal character, i.e. its particular suitability as a means of responding at an early stage to prevent conflicts and resolving conflicts flexibly and unbureaucratically through moderation and mediation processes.

In Germany, the potential offered by cooperation between various fields of decision-making should be exploited at the federal level just as much as at the Land level. For instance, the project advisory council of the Küsten-Kontor, which was established in 2008 and brings together representatives of various federal ministries and Länder, worked in coordination with other existing inter-Länder initiatives and working parties, taking steps to foster continuous, permanent exchanges of information, experience and opinions. However, such steps require flanking measures, e.g. in the form of research and project funding. Proposals have been made for the initiation of 'coastal' interministerial funding programmes under the auspices of the German Federation, for which purpose use should be made of the Research for Sustainable Development programme run by the Federal Ministry of Education and Research and the Environmental Research Plan administered by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. In order to purposefully coordinate the demands of different spatial uses and conservation concerns when plans and measures are implemented in coastal areas, account is to be taken of climate change and possible adaptive strategies, in particular. In this respect, an appropriate awareness of the problems being faced and knowledge of the interactions that take place are needed just as much as a functioning communication and management system. ICZM can provide a suitable framework for such a system.

As a matter of principle, the building of networks needs to be further strengthened in Germany. In this context, the provision of information forms an important basis for action and is to be pursued further. Enough experts and information platforms are available. It is now necessary to link them up in a reasonable way, network existing databases, make these databases more accessible, and involve a large number of actors in order to develop and implement joint strategies and measures for coastal development. In parallel to the spatial planning carried out by the coastal Länder and the German Federation, the ICZM process offers a suitable framework within which to develop solutions tailored to the problems that are being faced and so work towards sustainability along the coast.

4. Outlook for Germany

In 2002, the significance of the coast both as a natural habitat and cultural space, and as an economic, residential and recreational location for the population prompted the EU to accord particular attention to this unique, valuable space, and propose Integrated Coastal Zone Management as a means for its development. The coast encompasses not just marine areas, but also onshore coastal areas. The offshore and onshore coastal zones are subject to far-reaching changes that are being caused by the intensive demands made on land, resources and valuable ecosystems as a result of, for example,

- diverse, and sometimes competing, activities and concerns, e.g. shipping, the port industry, coastal protection, fishing and agriculture, nature conservation, tourism, infrastructure development or housing developments,
- recently introduced spatial uses, those associated with regenerative energy generation, for instance,
- increasing danger of floods and coastal erosion, more frequent extreme storm surges and rising sea levels as consequences of climate change.

The challenges and opportunities that result from these changes are also relevant for the German coastal areas on the North Sea and Baltic Sea. Germany has a long history of action to meet its responsibilities with regard to the development of suitable strategies and measures for the resolution of these problems. The competent decision-making levels within the German Federation, the coastal Länder and local authorities will continue to contribute to the practical implementation of coastal-relevant goals and the sustainable development of coastal areas in future, doing so by applying the Integrated Coastal Zone Management approach. Cooperation with interest group organisations and institutions that are concerned with the coast, and grassroots groupings is to be cultivated and expanded in order to preserve and further develop the coast as an ecologically intact, economically productive place for people to live. As far as this is concerned, it is a question of reconciling the various demands of users and conservation interests on the coast with one another while giving particular consideration to the productivity and resilience of the coastal environment in order to facilitate the sustainable development of the coastal zone. As an informal, flexible, unbureaucratic instrument, ICZM should be incorporated into responsible forms of action in the future even more than it has been in the past.

It is the early and interdisciplinary networking of actors, for example prior to the adoption of concepts, programmes, plans and approval procedures, that allows ICZM to offer new opportunities to engage in reciprocal dialogue about value concepts and interests, identify potential developments, synergies and conflicts, and develop appropriate solutions.

This progress report can only offer a small sample of the diverse ICZM activities that take place in Germany. It remains to be noted that Germany regards ICZM as a wide-ranging, unbureaucratic instrument that mediates between the various actors, sectors and levels – an instrument that complements the extant planning and licensing procedures. Thanks to this approach, coastal areas on the North Sea and Baltic Sea are regarded as a spatial unit across administrative boundaries. The German Federal Government will therefore stimulate

the ICZM process in Germany in future as well and promote approaches that help to resolve problems. The ICZM initiative launched by the European Commission will continue to provide purposeful support to this process at the national level.