

Beitrag / Abstract

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Planning at Sea: Shifting planning practices at the German North Sea coast

Planung am Meer: Planungspraktiken an der deutschen Nordseeküste im Wandel

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Abstract: Coastal and marine areas represent an increasingly important and relevant action space for spatial planning. However, to a large extent marine (or maritime) spatial planning has emerged separately from terrestrial spatial planning, constituting its own epistemic community. In particular, previous studies indicate that Marine Spatial Planning often follows an expert-driven resource management rationale focused on sea-use regulation. This paper examines practices of Marine Spatial Planning and Integrated Coastal Zone Management at the German North Sea coast. The paper focuses in particular on the engagement of spatial planners with these practices and their perception of their role therein. We seek to understand what form spatial planning at the coast and at sea currently takes and how this might develop in the future in response to current and anticipated policy developments. We argue for the necessity of a communicative, cross-sectoral approach to spatial planning at sea, providing a spatial vision for the future that extends from the Exclusive Economic Zone to encompass both the coastal waters of the federal states and the land-sea interface in a substantive manner.



Keywords: Integrated Coastal Zone Management, Marine Spatial Planning, planning paradigms, Lower Saxony, Schleswig-Holstein

Zusammenfassung: Küsten und Meere stellen ein zunehmend wichtigeres und bedeutenderes Aktionsfeld für räumliche Planung dar. In der marinen oder maritimen Raumordnung hat sich ein weitgehend eigenständiger Kreis an Experten in Verwaltung und Wissenschaft herausgebildet, nicht zuletzt, weil sich die maritime Raumordnung in den letzten Jahren in weiten Teilen unabhängig von der terrestrischen Raumordnung entwickelt hat. So zeigen verschiedene Publikationen auf, dass maritime Raumordnung dazu tendiert, einem expertenorientierten, rationalen Planungsansatz zu folgen mit dem Schwerpunkt auf Meeresnutzungsregulierung. In dieser Studie untersuchen wir, wie Planungspraktiken in der maritimen Raumordnung und im Integrierten Küstenzonenmanagement an der deutschen Nordseeküste angewendet werden und wie Planer ihre Rolle in diesen Praktiken wahrnehmen. Welche Formen nimmt räumliche Planung an der Küste und im Meer gegenwärtig an und wie könnten sich diese als Reaktion auf gegenwärtige und zukünftige Veränderungen in der Planungspolitik weiterentwickeln? Wir plädieren für die Notwendigkeit, auf der Basis einer übergreifenden Vision von der Ausschließlichen Wirtschaftszone über die Küstengewässer bis einschließlich der Schnittstellen zwischen Land und Meer verstärkt kommunikative, raum- und sektorübergreifende Ansätze zu nutzen.

Schlüsselwörter: Integriertes Küstenzonenmanagement, Maritime Raumordnung, Planungsparadigmen, Niedersachsen, Schleswig-Holstein

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1 Introduction

Coastal and marine areas represent an increasingly relevant and important action space for spatial planning. Increasing demands and competing claims on marine space and the coastal zone associated with the development of off-shore renewable energy and promotion of the ‘blue economy’¹, increased density of marine traffic flows and concerns for the protection of coastal and marine ecosystems and landscapes, provide a strong rationale for the regulation and coordination of socio-economic activities at sea through spatial planning (ARL 2013; Kannen 2014). The challenges posed by anthropogenic climate change and sea-level rise to established forms of coastal protection and nature conservation further accentuate the need for future-orientated cross-sectoral dialogue and integrated spatial strategy-making (Clarke/Stocker/Coffey et al. 2013; O’Riordan/Gomes/Schmidt 2014; Walsh 2018). At the same time, coastal regions in Germany and elsewhere face structural challenges associated with demographic change, socio-economic peripherality and over-dependence on seasonal tourism (e.g. Van Dijk/Broersma/Mehnen 2016; Gerkenmeier/Ratter 2018). From this perspective, the coastal and marine environment might be viewed as a form of ‘test case’ for the capacity of strategic spatial planning to effectively integrate or coordinate the spatial dimensions of other sectoral policies and interests on land and at sea. Starting from its introduction to European policy debates in the 1990s, the concept and practice of Integrated Coastal Zone Management (ICZM) have sought to respond to this challenge through the development of collaborative ways of working across traditional governance boundaries at the coast. In Germany, as elsewhere, Integrated Coastal Zone Management has for the most part been viewed as an informal non-statutory approach, as will be shown later in this paper. More recently, Marine Spatial Planning (MSP)² has emerged as a formalised and statutory framework for the spatial coordination of economic activities and ecosystem-based management at sea. However, the division of spatial competences concerning the Exclusive Economic Zone (EEZ) (federal), coastal

waters (federal states), and coastal hinterland (variously: federal states, regional districts, municipalities) presents significant challenges to the development of coherent spatial plans for the marine and coastal space under German jurisdiction. This applies in particular to the scope to address socio-economic and ecological interactions between land and sea in a meaningful manner (c.f. ARL 2013). This paper critically reviews the engagement of spatial planning policy and practice with Integrated Coastal Zone Management and Marine Spatial Planning at the North Sea coast of Schleswig-Holstein and Lower Saxony, and draws conclusions with regard to the future role of spatial planning at the coast and at sea. It is argued that realising the integrative and transformative potential of spatial planning at the land-sea interface requires a shift from the current comprehensive-rational planning paradigm to a strategic-communicative approach.

Following a review of international developments in Integrated Coastal Zone Management and Marine Spatial Planning (Section 2), key characteristics of these two planning paradigms and their application within a coastal and marine context are examined (Section 3). The methodological approach and case study context are set out in Section 4. Section 5 is devoted to the empirical case study analysis focusing on the development of Integrated Coastal Zone Management and spatial planning for the coastal waters in Lower Saxony and Schleswig-Holstein respectively. The paper closes with a comparative discussion (Section 6) and conclusions (Section 7).

2 ICZM and MSP in International Context

The concept and practice of Marine Spatial Planning has received heightened academic and policy attention in recent years, culminating in the adoption of the European Union Directive on maritime spatial planning in July 2014 (EU 2014).³ The Directive requires all EU Member States to produce spatial plans for their marine territorial waters and Exclusive Economic Zones by 2021. The original proposal from the European Commission included both Marine Spatial Planning and Integrated Coastal Zone Management. The ICZM component however has been left out of the final version of the Directive adopted by the

¹ The term ‘blue economy’ is employed to refer to all economic activities dependent on the sea (European Commission 2012). The term ‘blue growth’ is employed in a similar manner to refer to growth of economic activities at sea.

² In this paper we use the terms marine / maritime spatial planning interchangeably. From an etymological perspective, it may be noted that ‘marine’ refers more directly to the sea itself, whereas ‘maritime’ pertains to objects or activities at sea.

³ Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning.

European Parliament due to the resistance of several member states. This omission reflects long-standing concerns that an ICZM Directive would encroach on the (terrestrial) spatial planning competences of member states (Committee of the Regions 2013). The MSP Directive nevertheless states that Marine Spatial Planning “should take into account land-sea interactions” and “should aim to integrate the maritime dimension of some coastal uses or activities and their impacts”.⁴ Accordingly, inshore territorial waters must be included within either marine spatial plans or land-based spatial plans where they extend beyond the coastline and this is communicated within the marine spatial plan.⁵

In parallel to the development of legislative proposals and the emergence of marine spatial plans and institutional arrangements at national and sub-national levels of governance, Marine Spatial Planning has become the focus of considerable research activity. Indeed, a substantial shift is evident, from research, discussion and debate on Integrated Coastal Zone Management in the 1990s and early 2000s to a dominant focus on Marine Spatial Planning over the last ten years. Peel and Lloyd (2004: 374) refer to an incremental but non-linear process of “adaptive social learning” as concerns for the on-shore impacts of off-shore activities gradually led to a broadening of the spatial planning field to include the coastal zone and marine environment. Shipman and Stojanovic (2007: 389) perhaps more critically refer to a “new coastal squeeze” characterised by a shift in policy attention away from the coastline due to the emergence of marine governance as a distinct policy field. Integrated Coastal Zone Management has been seen by many government authorities in northern Europe as a development stemming from science and non-statutory pilot projects. However, Marine Spatial Planning in the European Union developed as a tool to support ‘blue growth’ on one hand and as a statutory tool to sort out spatial conflicts on the other hand. Marine Spatial Planning in German Exclusive Economic Zones, for example, was problem-driven, addressing first of all conflicts between offshore-windfarm development and other human activities, in particular shipping (Kannen 2014).

Integrated Coastal Zone Management and Marine Spatial Planning may both be described as integrative approaches to the strategic management of coastal and maritime resources. Both approaches call for stakeholder engagement, and a transdisciplinary evidence-informed approach to decision-making within a sustainable development policy framework (e.g. Sorenson 1993; Douvère/Ehler 2009). The evolution of Marine Spatial Planning in practice has been influenced by pragmatic concerns stemming from recognition of the diverse range of potentially conflicting demands on maritime space. As a concept, Marine Spatial Planning has been informed by natural science perspectives concerned with the management of the marine ecosystem (Kidd/Shaw 2014). Perhaps as a consequence there has been limited debate in the academic literature on the form Marine Spatial Planning should take or on the interaction between Marine Spatial Planning, land-based spatial planning and other forms of coastal management (exceptions include Kidd/Ellis 2012 and Portman/Dalton/Wiggin 2015). Furthermore, there are different traditions in European countries about how to do spatial planning as well as marine management. While some countries acted as pioneers in the development of Marine Spatial Planning, e.g. Belgium, Germany, the Netherlands and the UK, each of them in accordance with their own tradition and culture of planning, others only started when required to do so by the EU Directive. As a consequence, there has been no common starting point or joint development of Marine Spatial Planning practices to date, even though exchange among planning practitioners in joint networks and EU-funded projects exists and is becoming more extensive (see Jay/Alves/O’Mahony et al. 2016).

Research on the role of spatial planning in coastal management has similarly taken a normative, prescriptive approach where the spatial delineation of coastal zones is generally assumed to be unproblematic and defined according to eco-systemic or morphological criteria (e.g. Allmendinger/Barker/Stead 2002; Ahlhorn 2009; Bruns 2010). Recent studies have, however, shown that Marine Spatial Planning takes place in a contested context of multiple functions, perceptions, values and framings of marine issues with significant implications for the development of planning and management strategies (Gee 2010; Ritchie/Ellis 2010; Kannen 2014). Critical contributions to the growing literature on Marine Spatial Planning from academic spatial planning scholars have however argued for in-depth reflexive engagement with Marine Spatial Planning from a social science perspective (Peel/Lloyd 2004; Kidd/Ellis 2012). Jay (2012, 2013) provides a critique of the functional zoning orientation

⁴ Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning (16).

⁵ Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning, Art. 2, No. 1.

and dominance of positivist rationalist interpretations of space in current approaches to Marine Spatial Planning and suggests that Marine Spatial Planning can benefit from a relational understanding of space. Kidd and Shaw (2014) critique the dominant instrumental view of Marine Spatial Planning as a rational, technical process of universal applicability, contending that Marine Spatial Planning is “a social and political process that is inevitably highly differentiated and place-specific” (Kidd/Shaw 2014: 1536). Integrated Coastal Zone Management similarly should be understood as a place-based situated practice, where the object of coastal protection itself is often not self-evident but subject to contestation and negotiation (Cooper/McKenna 2008). The sea may be objectively understood as a material tangible space, but also as a ‘peopled seascape’ of subjective perceptions and intangible social and cultural values (Shackeroff/Hazen/Crowder 2009; Gee 2010; Jay 2018; Walsh 2019). Indeed, it is increasingly recognised that processes of Integrated Coastal Zone Management and spatial planning at the coast need to incorporate both lay and expert knowledge and the broad range of values associated with the coast and sea, whether as cultural land- and seascapes (e.g. Gee/Kannen/Adlam et al. 2017), protected natural spaces or sites for resource extraction and development of the ‘blue economy’ (Flannery/Healey/Luna 2018). From the above literature review, it is evident that in-depth case study research is required to better understand practices of Integrated Coastal Zone Management and Marine Spatial Planning within their specific regional contexts. This paper contributes to an improved understanding of experience to date with Integrated Coastal Zone Management and Marine Spatial Planning at the German North Sea coast, providing an empirical basis from which to draw conclusions with regard to development of future approaches and practices.

3 Conceptual framework: A strategic-communicative role for spatial planning at the coast?

In the following, we develop a conceptual framework for the analysis of practices of Integrated Coastal Zone Management and Marine Spatial Planning, drawing on planning-theoretical debates on paradigms of spatial planning. For the purposes of this paper, spatial planning is understood to encompass all forms of formal and informal planning conducted for the purpose of regulating land and/or sea uses and the management of spatial

development (e.g. Faludi 2000; Thierstein 2002). The term Marine Spatial Planning applies to spatial planning at sea, whether conducted by the federal states for the coastal waters or the federal level of government for the Exclusive Economic Zone (ARL 2013; Kannen 2014). The term Integrated Coastal Zone Management broadly refers to the integrated and sustainable management of coastal resources (Portman/Dalton/Wiggin 2015). The application, interpretation and geographical scope of Integrated Coastal Zone Management as practiced in Lower Saxony and Schleswig-Holstein is discussed in detail in Section 5 below. From this discussion, it will become evident that Integrated Coastal Zone Management is a contested concept (see also Walsh 2019).

In the 1990s and early 2000s a substantial shift in planning practices in a number of European countries became evident, characterised by increased attention being paid to the potential for spatial planning to serve a cross-sectoral, integrative function. This apparent shift towards a more strategic form of spatial planning followed widespread disillusionment with regard to the capacity of spatial planning to achieve desired outcomes in the 1980s and a general retreat from ambitious large-scale plan-making (for Germany see Kühn 2008). For many commentators, strategic spatial planning is thus situated between the rational comprehensive (integrated development planning) model of the 1960s and 1970s and the incrementalism of the 1980s (e.g. Frey/Hamedinger/Dangschat 2008; Kühn 2008). Rather than seeking to develop a comprehensive and detailed plan for a given space, strategic spatial planning became associated with a selective and schematic approach to spatial strategy-making (Healey 1999). Given the complexity of contemporary governance arrangements and uncertainty inherent in urban and regional development dynamics, the claim to integrate across all relevant policy areas, levels of governance and stakeholders has been substantially revised in favour of an emphasis on selective coordination and the active development of cross-sectoral governance capacity (e.g. Healey 1998; Healey 2006).

This interpretation implies a non-linear approach to spatial planning, characterised by iterative interchange between the development visions and objectives and the implementation of selected projects. In this way, the planning process is never completed, as objectives and implementation priorities are revised over time in response to external developments and the continuous evaluation of the application of the spatial strategy in practice (Faludi 2000; Kühn 2008). The object of planning

Table 1: Rational-comprehensive and strategic-communicative planning paradigms from a comparative perspective

	Rational Comprehensive	Strategic Communicative	Key References
<i>Process</i>	Linear	Iterative, cyclical	Faludi (2000); Kühn (2008)
<i>Knowledge</i>	Evidence-based	Evidence-informed	Davoudi (2006)
<i>Role of Planner</i>	Technical Expert	Mediator and Facilitator	Healey (2006)
<i>Concepts of Space</i>	Bounded container spaces	Relational space, place qualities	Healey (2007); Jay (2012); Jay 2013)
<i>Concept of Future</i>	Predictive, closed	Uncertain, open	Faludi (2000); Davoudi (2012)
<i>Steering Capacity</i>	All relevant policy areas	Selective, Partial	Healey (1999); Kühn (2008)

thus shifts from material outcomes to the capacity to influence decision-making through the development of an interpretative frame of reference (Healey 1999; Faludi 2000). Further characteristics associated with strategic spatial planning are outlined in Table 1. In particular, a shift from evidence-based to evidence-informed policy-making is noted, indicative of the inclusion and recognition of non-expert knowledge and values in addition to technical ‘evidence’ (e.g. Davoudi 2006).

The emergence and articulation of the concept of strategic spatial planning reflects a changed governance landscape and a more selective approach to urban and regional development. In particular, whereas the rational comprehensive approach of the post-war period rested on the assumption that planning authorities had the governance capacity and resources to make substantive decisions and effect large-scale change, the strategic spatial planning paradigm reflects a multi-actor governance landscape and increased attention to and recognition of the complexity and uncertainty inherent in spatial development processes. As such, there is an increased focus on the (potential) role of spatial planning strategies in communicating a particular spatial vision and policy priorities for a given space into the future, and less emphasis on the legally defined regulatory role of spatial planning in designating specific land-uses and functions.

As outlined above, Integrated Coastal Zone Management represents an ambitious policy agenda requiring a high degree of cross-sectoral coordination and integration of objectives. Integrated Coastal Zone Management would thus appear to fit well with a strategic spatial planning paradigm. At the same time, it is evident that current approaches to Marine Spatial Planning have been influenced significantly by rational-technical approaches, characteristic of a marine management context (Jay 2010). It might also be argued

that the more limited role and number of socio-economic activities and competing interests in a marine context makes a rational-comprehensive approach informed by technical expertise less difficult to achieve than would be the case on land. This, however, would only be possible if the marine space is treated as an abstract spatial container separate from neighbouring spaces – and may even then prove to be difficult. Where land-sea or cross-border interactions are given due attention, and spatial developments on the coast are included within an ICZM or MSP framework, the need for a strategic-communicative approach with the capacity to take account of diverse values, perspectives and at times competing policy objectives becomes evident (Jay 2018; Walsh 2019).

4 Methods and case study context

Following an interpretative policy analysis framework, the analysis presented here encompasses a detailed investigation of the texts of selected spatial policy documents and plans as well as six semi-structured qualitative interviews with key officials and other governance actors in the fields of spatial planning and coastal management (cf. Wagenaar 2011). The policy documents were chosen to reflect the adoption of Integrated Coastal Zone Management and Marine Spatial Planning at federal state and regional levels of governance in Lower Saxony and Schleswig-Holstein, whether within the framework of spatial planning or from the perspective of other policy sectors (primarily coastal protection). In addition, two papers, reviewing the implementation of Integrated Coastal Zone Management in the two federal states, were included in the analysis

Table 2: Summary description of interviewee roles and responsibilities

Interview Code	Roles / Responsibilities
P1	Spatial planner with responsibility for ICZM, Schleswig-Holstein
P2	Spatial planner, Regional District of Aurich, Lower Saxony
C2	Coastal protection official, Schleswig-Holstein
C4	Coastal protection official, dyke association, Krummhorn, Schleswig-Holstein
R1	Official with responsibility for regional development and ICZM, Lower Saxony
C5	Official with responsibility for applied research in coastal protection, Lower Saxony

(Dickow/Liebrenz 2007; Sewig 2007). These reports provide the perspective of planning officials directly engaged in this field. The selection of interviewees followed a similar rationale. The interviewees were chosen to reflect the engagement of spatial planners, and where relevant other policy officials, with Integrated Coastal Zone Management and Marine Spatial Planning. Interviews with actors in coastal protection were conducted in order to gain insights into perceptions of Integrated Coastal Zone Management within the policy sector with primary responsibility for many of the issues to be addressed. Each of the interviewees was in a position of responsibility within their respective organisations. A summary description of the interviews included within the analysis for this paper is included in Table 2. Where practicable, specifics pertaining to organisational affiliation are not included in order to maintain the required degree of anonymity.

The interviews, although limited in number, provided an opportunity for reflection on the interviewee's experience with the policy and practice of Integrated Coastal Zone Management and to a lesser extent Marine Spatial Planning. The interviews were conducted between 2016 and 2018 (in German). The analysis is informed by a broader set of 32 additional interviews conducted with actors and stakeholders in coastal management and nature conservation at the North Sea / Wadden Sea coast of Germany, Denmark and the Netherlands over the same period (see also Walsh 2018; Walsh 2019). The paper furthermore draws on the practical experience of one of the authors with over 15 years of applied research on Integrated Coastal Zone Management and Marine Spatial Planning at the North and Baltic Sea coasts.

The paper focuses specifically on practices of spatial planning and coastal management at the North Sea coast of Lower Saxony and Schleswig-Holstein. The two federal states are characterised by markedly

different governance structures with a significantly higher degree of centralisation evident in Schleswig-Holstein. This key structural difference is reflected in the design of the research and its presentation below. In particular, the preparation of a regional spatial plan for the regional district of Aurich is given particular attention within the Lower Saxony case study, whereas the analysis in Schleswig-Holstein necessarily remains, with minor exceptions, at the level of the federal state. Interviews were conducted by the author in German, and were subsequently transcribed, annotated and coded following a constructivist grounded theory approach (Corbin/Strauss 2015). The interviews were informed by a common set of research objectives and topics, yet conducted in a flexible manner to allow for a more specific focus on individual policy developments and initiatives pertaining to the direct experience of the interviewee (e.g. involvement in spatial plans at federal state and/or regional levels, involvement in cross-sectoral working groups or the Wadden Sea 2100 process in Schleswig-Holstein). The analysis of policy documents focused specifically on the application and interpretation of Integrated Coastal Zone Management and the development of spatial planning policies for the coastal waters of the two federal states. The interview quotes and extracts from policy documents cited below were translated by one of the authors. In Section 5, we examine the introduction and application of Integrated Coastal Zone Management in Lower Saxony and Schleswig-Holstein. The empirical analysis from the two case studies is brought into comparative perspective in Section 6, following which we draw more general conclusions concerning the future of spatial planning at the coast and at sea, in the final section of the paper.

5 ICZM as communicative practice? Integrative ambitions in Lower Saxony and Schleswig-Holstein

5.1 Lower Saxony: Planning policy ambitions

The need for management of the coastal zone through spatial planning instruments was first formally identified in Lower Saxony at a joint conference of the ARL (Akademie für Raumforschung und Landesplanung) and the State Ministry for Spatial Planning in 2001 in Cuxhaven. The declaration approved by the conference participants prepared the way for a spatial planning perspective aimed towards the consensual and sustainable development of the coastal zone (Sewig 2007). Subsequently, in the following year, it was decided to include the coastal waters up to the 12-sea-mile boundary within the spatial planning of the state. This was implemented through a partial revision and extension of the 1994 State Spatial Planning Programme LROP, completed in 2006 (MELELV 2006). In this context, a flexible interpretation of the extent of the coastal zone was introduced, depending on the issue in question. In parallel, a spatial planning concept for the coastal waters (ROKK – Raumordnungskonzept Küstenmeer) was prepared with the intention of providing the ‘conceptual foundation’ for the LROP extension and Integrated Coastal Zone Management in Lower Saxony more broadly (MLRELV 2005). Integrated Coastal Zone Management was perceived as part of a shift towards more integrative policy-making, whereby spatial planning could play an important strategic role: “After times of sectoral parallelism, integrative approaches are called for. Spatial planning can take on an overarching steering and ordering function” (Sewig 2007: 293).

The above citation indicates an awareness of the potential for spatial planning to take on a ‘steering’ governance function, with relevance for other policy sectors. This perspective reflects debates on strategic spatial planning at a time of relative planning optimism in Europe, following the publication of the European Spatial Development Perspective (ESDP; CEC 1999). Spatial planning was, in this context, understood in terms of the coordination of the spatial dimensions of sectoral policies (see also Adams/Alden/Harris 2006). The ROKK was understood as an ‘offer’ for interested parties to gain information on coastal and maritime

issues, in particular those with conflict potential. The aim was to initiate dialogue around potential spatial planning solutions. To support this, an internet-based Integrated Coastal Zone Management platform was envisaged and subsequently implemented with the objective of facilitating exchange around good practice projects. In practice, the platform, hosted by the Office of Regional State Development Weser-Ems, provides a map-based overview of relevant projects in the Lower Saxony coastal zone and neighbouring areas of the North Sea. The projects listed include a broad spectrum of projects either completed or currently under way, many led by or with the participation of research institutes or universities. The platform, in itself, however, does not provide for interactive exchange or discussion on the further development of Integrated Coastal Zone Management. Sewig (2007: 293) stated that Integrated Coastal Zone Management was met with “strong reservations” at local and regional levels: “ICZM ails at the local level because the meaning of this instrument in its practical application and the associated specific added value could not be successfully communicated or has remained unclear”. Local actors feared an immense additional administrative effort at a time of limited resources for local and regional authorities. As a consequence, the motivation to participate in ICZM activities was reported to be limited, if not sinking (Sewig 2007: 293). This strikingly frank assessment from a public sector official at state government level reveals much about the Integrated Coastal Zone Management experience ‘on the ground’ in Lower Saxony, and perhaps elsewhere along the North Sea coast.

The principles and objectives of Integrated Coastal Zone Management were, nevertheless, subsequently formally established in the Planning Law of 2007 and Spatial Planning Programme of 2008. Integrated Coastal Zone Management is presented as a form of integrated coastal management focused on sustainable development: “a dynamic, continuous and iterative process, through which decisions are made for the sustainable use, development and protection of the coast, including its resources” (MELVLE 2008: 67). The 2008 Spatial Planning Programme further refers to Integrated Coastal Zone Management as a task requiring a “thematically and geographically comprehensive perspective” whereby “all affected areas, groups actors and the relevant local, regional and national administrative institutions are integrated” (MELVLE 2008: 8). Noteworthy here is the emphasis on integrating all affected areas, stakeholders, levels of governance and thematic policy areas, in practice a highly ambitious

and perhaps impossible task. This approach clearly reflects a comprehensive-integrated planning paradigm (see Section 3).

In addition, it is stated that plans and measures should be reversible and adaptive in order to take account of coastal dynamics and variability and the implications of improved knowledge in the future. This principle is of potentially far-reaching significance in its implicit suggestion that current dyke-based coastal protection measures may need to be revised in the future in response to climate change and sea-level rise. These principles are restated in the most recent Spatial Planning Programme of 2012. In addition, the 2012 LROP includes a recommendation that in the context of climate change, risk-based precautionary measures should be taken into consideration in coastal areas vulnerable to storm-floods. Importantly, these potentially at-risk areas are said to include areas protected by dykes and other flood barriers on both the mainland coast and the East Frisian islands. Here flexible, adaptive plans and measures should be adopted in response to the flood risk. In addition, areas with high risk potential should be identified as flood retention areas (MELV 2012: 7). These principles represent a substantial challenge to current practices in coastal protection and the official position that the dykes are secure until at least 2100. As noted below, the implementation of these principles at the regional level has met with significant challenges due to the dependence of coastal communities on effective protection from storm flood risks.

5.2 Lower Saxony: ICZM at the Regional Level

A considerable time-lag is, however, evident in the implementation of the spatial planning policy at the regional level. At the time of writing, the regional spatial plans of four of the seven⁶ regional districts at the Lower Saxony coast were prepared on the basis of the 1994 LROP.⁷ The Regional Spatial Plan (RROP) for the district of Aurich, currently under preparation, will be the first prepared on the basis of the 2012 LROP and is thus given closer attention here. In the preparation of the draft RROP, efforts have been made to maintain a constructive dialogue with local politicians and other stakeholders.

⁶ Including Stade at the Elbe estuary.

⁷ See https://www.ml.niedersachsen.de/themen/raumordnung_landesplanung/regionalplanung/Regionale+Raumordnungsprogramme+Niedersachsen-4973.html (03.12.2018).

The draft plan commences with ‘theoretical reflections’ concerning the role of regional visions (Leitbilder) as “instruments of a communicative and cooperative spatial planning” (Landkreis Aurich 2015: 5). Leitbilder are understood to reflect a regional consensus of jointly supported objectives and principles with the capacity, based on this consensus, to act as instruments for integration and platforms for cooperation among multiple actors (Landkreis Aurich 2015: 5). This clear emphasis on a communicative and cooperative approach to spatial planning reflects recent developments in planning practice both nationally and internationally, but also the experience of a failed attempt to produce a new RROP in 2006. This earlier draft plan failed due to specific objections of landowners to Natura 2000 nature conservation designations (I_P2).

The draft RROP makes explicit reference to the Integrated Coastal Zone Management and its role in the pre-emptive prevention of land-use conflicts in the coastal zone (Landkreis Aurich 2015a: 24). It is stated that “the coast is to be protected from damage due to storm floods and loss of land and to be developed in harmony with ecological and tourism interests”, indicating a need to balance multiple objectives and potentially conflicting values (Landkreis Aurich 2015a: 24). The sea area in front of the dykes is included in thematic maps of the plan where relevant, although this area is under the formal jurisdiction of the federal state of Lower Saxony (see Figure 1).

Securing sites for sand and clay extraction is identified as a specific responsibility of spatial planning, a long-standing issue of contention for landowners and nature conservationists at the Lower Saxony coast (cf. Striegnitz 2006; I_C4). Reflecting the adaptive management approach espoused by the 2012 LROP, it is stated that in the context of climate change, the District of Aurich must “endeavour at an early stage to consult expert knowledge, quickly address identified weak points in its dyke line and apply new or alternative coastal protection strategies in line with scientific developments” (Landkreis Aurich 2015a: 24). This statement implies a public acknowledgement that the dyke line may not provide security from rising sea levels and storm-floods in the medium to long term and that as a consequence alternative coastal protection measures, such as the managed realignment of the coastline might be required. Nevertheless, the recommendation of the 2012 LROP to identify flood retention areas at the coast is not implemented in the draft RROP. A spatial planner involved in the preparation of the draft plan remarked that this would not be politically possible, as

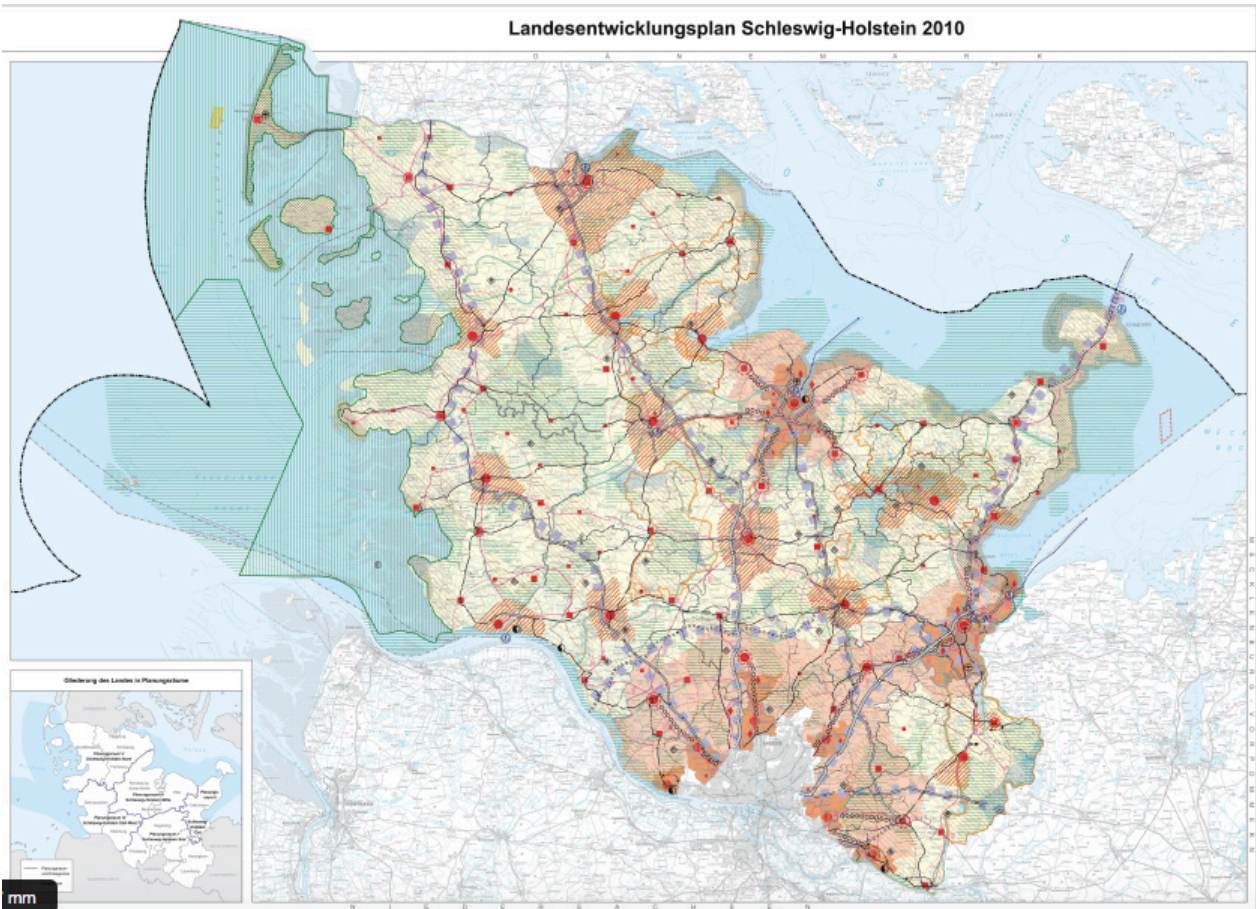


Figure 1: Aurich District Regional Plan 2015: Nature and landscape thematic map. Source: Landkreis Aurich (2015b: n.p.); the orange boundary lines demarcate Natura 2000 areas. The areas marked with dark green vertical lines represent priority areas for nature and landscape.

it would have potentially far-reaching consequences for future development projects across the full extent of the area of the Krummhörn (I_P2). This case reveals the political sensitivities associated with specific issues of spatial planning at the coast, particularly with regard to adaptation to future coastal change. In this context, Integrated Coastal Zone Management might be expected to provide a framework for cross-stakeholder dialogue on the implications of climate change at the coast for spatial planning and regional development more broadly. In practice, however, the need for Integrated Coastal Zone Management is questioned with the argument that much of what Integrated Coastal Zone Management is about takes place anyway: “Why do we need to have an instrument called ICZM if we [...] have operationalised what these four letters describe in our daily work [...]? That is a reason why it did not gain acceptance, because the opinion was something was being imposed upon us which we did anyway in our own interest” (I_P2).

The above citation reveals a disconnect between the concept and principles of Integrated Coastal Zone Management as formulated at the state government level and internationally and the practical realities of working with coastal issues at the local and regional scales. It is further noted that despite its inclusion in the draft LROP, Integrated Coastal Zone Management has moved out of the focus in recent years, reflecting the assessment of Sewig (2007) discussed above. This perception is shared by an official engaged in applied research on coastal protection in Lower Saxony, who suggested that Integrated Coastal Zone Management has remained at ‘meta-level’ (also I_C5). Reference is made, however, to a series of applied research projects where stakeholders have come together to engage in dialogue on coastal management and climate adaptation issues. These projects include A-Küst (2009-2013) concerned with alternative adaptation strategies in coastal protection; COMTESS (2011-2015) with a specific focus on climate

change scenarios, sustainable land management and ecosystem services; KLEVER (2015-2018) concerned with the implications of sea-level rise for land drainage in the area of Krummhörn; and EXTREMENESS (2017-2018) focusing on the potential implications of extreme storm-flood events at the North Sea. Each of these projects has served to bring stakeholders together and to create a space for dialogue and discuss concerning issues of future relevance which are nevertheless located outside of the day-to-day work of the stakeholders involved. EU INTERREG territorial cooperation projects have also been identified as a source of inspiration for thinking beyond the boundaries of formal planning spaces and learning from experience in other jurisdictions (I_R1). In these comparatively informal contexts, many topics and principles associated with Integrated Coastal Zone Management such as precautionary planning, dynamic adaptation and cross-sectoral integration are addressed, albeit with limited explicit reference to Integrated Coastal Zone Management as a concept. It is possible that Integrated Coastal Zone Management requires such informal institutional spaces and the relatively narrow frameworks provided by individual research projects as a means of moving beyond the all-encompassing integrative ambitions associated with the concept in formal planning statements at state government and regional scales. Spatial planners can nevertheless play a potentially significant role in these project contexts, situating specific coastal management and climate change issues within their broader spatial development context.

5.3 Schleswig-Holstein: Planning Policy Ambitions

Initial experiences with Integrated Coastal Zone Management in Schleswig-Holstein took a different route with the publication of an ICZM Framework Concept in 2003. The framework concept identified Integrated Coastal Zone Management as a cross-cutting task at both federal state and regional scales and as a communication process aimed at achieving greater acceptance of planning projects and policies in the coastal zone (Dickow/Liebrenz 2007). Integrated Coastal Zone Management was interpreted here as the “systematic steering of all spatially significant developments in the coastal zone including the adjacent sea area” (Innenministerium des Landes Schleswig-Holstein 2003: 5). Similar to Lower Saxony, we find a desire to include all relevant aspects, but with a slightly narrower focus

on ‘spatially significant developments’ and on steering rather than the implementation of a comprehensive perspective. This approach thus might be characterised as influenced by both rational-comprehensive and strategic-communicative planning paradigms. The spatial extent of the coastal zone is defined in terms of the area where terrestrial and maritime processes are co-dependent or mutually influencing. As was the case in Lower Saxony, the boundaries of the coastal zone are understood to vary on a case-by-case basis according to the specific issue in question. The federal state government (Land) of Schleswig-Holstein was assigned a role involving information provision, coordination and moderation. For this purpose, a coordination office was established within the Ministry for Spatial Planning and an inter-ministerial working group (IMAK) on Integrated Coastal Zone Management was established. Perhaps reflecting evident difficulties in establishing a coordinated joint perspective as well as the influence of international policy developments, the inter-ministerial working group was replaced and superseded by the working group Zukunft Meer (Future of the Seas) which adopted integrated maritime policy as its rationale for coordination. This working group has a stronger focus on economic development and technological innovation relating to ‘blue growth’. Within this context, the influence of spatial planning policy and the consideration of spatial issues, including land-sea interactions, are more limited, while specific support for maritime industries and technology development has gained importance.

A Spatial Planning Report for the sea and coast was published in 2005, with the stated aim of providing a comprehensive overview of uses and interests within the coastal zone (Innenministerium des Landes Schleswig-Holstein 2005). The coastal waters within the jurisdiction of the Land of Schleswig-Holstein were subsequently included within the State Development Plan (LEP) of 2010 (see Figure 2). The LEP, however, does not make any specific spatial policy recommendations or decisions for the maritime area. Designations at sea are for informational purposes only (Wadden Sea National Park boundaries) with the exception of the identification of a location for sediment extraction in the North Sea west of Sylt. The inclusion of the coastal waters within the State Development Plan constitutes an important step towards the development of a spatial planning perspective for the coastal waters. To date, however, there is no evidence of a long-term spatial strategy or discussion of the interrelationships between different activities at sea (such as shipping, tourism, recreation, fishing, conservation and resource extraction) and their

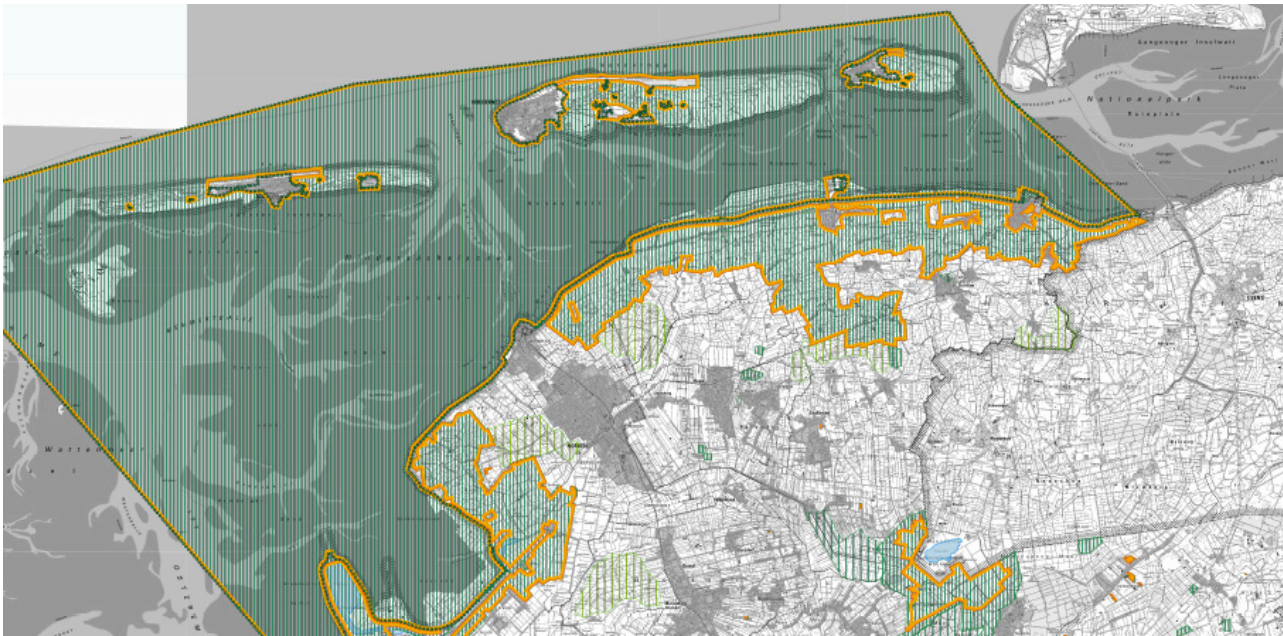


Figure 2: Inclusion of coastal waters in the State Development Plan 2010 for Schleswig-Holstein. Source: Innenministerium des Landes Schleswig-Holstein (2010: n.p.)

respective spatial footprints. A spatial planner reflected that they would have liked to have included other aspects such as shipping routes and environmental designations and indicated that spatial planning for the coastal waters was still under development: “What we can regulate there [...] all that still needs to be found out a little, I have the feeling, I could imagine that it will develop more strongly in the future” (I_P1).

More generally, it is reflected that Integrated Coastal Zone Management from a planning perspective has shifted perceptions regarding the coastal and sea area: “Not to see it only as a source of the danger [...] the sea, but also to see if it can be used economically without of course damaging the natural conditions too much” (I_P1). This interview citation indicates that planning at sea implies the framing of the sea as a space of opportunity with a use value, a framing that is more explicitly evident in the policy agenda of the Future Oceans (Zukunft Meer) working group.

5.4 Schleswig-Holstein: ICZM at the Regional Level

In addition, Integrated Coastal Zone Management was understood as a cross-cutting task at the regional level of governance. Significantly, the ‘regional’ level was interpreted in a functional sense, not necessarily corresponding to the formal political-administrative

boundaries of the regional districts but as “coherent problem and potential spaces at regional, national or international scales” (Innenministerium des Landes Schleswig-Holstein 2003: 23). This regional understanding likely reflected experience with INTERREG territorial cooperation projects, operating at a variety of scales, from the macro-regional (e.g. North Sea) to the local. The ICZM Framework Concept reflects that spatial planning is increasingly taking on a “process character” with regional development concepts and regional management processes acting to counter-balance the centralised preparation of regional spatial plans in Schleswig-Holstein (Innenministerium des Landes Schleswig-Holstein 2003: 23). It is further suggested that although formal competences for spatial planning at the coast lie primarily at the communal level (Gemeinde), informal regional development instruments can play an important role in the implementation of Integrated Coastal Zone Management (Innenministerium des Landes Schleswig-Holstein 2003: 23). Legal provisions for incorporating the results of such informal processes within the formal spatial planning framework are identified. A regional development concept for the West coast (under preparation at that time) and a regional management concept for the K.E.R.N. Region⁸ are

⁸ The K.E.R.N. Region comprises a network of the cities of Kiel, Eckernförde, Rendsburg and Neumünster in northern Schleswig-Holstein.

cited as positive examples of the integration of ICZM principles through informal instruments. However, both examples were never seriously implemented and the K.E.R.N. Region, which had served as a pilot for regional cooperation across local administrative boundaries since 1991, collapsed in 2008.

The advocates of an ICZM approach within the federal state ministry stressed its role as a communicative process through which the potential of coastal zones might be identified and conflicts between sectoral stakeholders or interest groups could be resolved. In particular it was hoped that Integrated Coastal Zone Management might lead to greater public acceptance of coastal protection plans, measures and projects (Dickow/Liebrenz 2007: 283). The Planning Department of the State Chancellery sought to develop a network of officials within the coastal municipalities who are engaged with coastal and marine issues. Integrated Coastal Zone Management was, however, narrowly framed here with reference to the existing spatial planning policy context. As a consequence, this network focused on the comparatively poorly resourced coastal municipalities and did not seek to include government agencies with responsibility for coastal protection, nature conservation, tourism or other relevant interests at the coast (I_P1). In practice, it thus proved challenging for the ICZM agenda to become embedded within the operational structures of the municipalities (I_P1). More specifically, the planning officials of the State Chancellery viewed the municipalities (Gemeinden) rather than the regional districts (Landkreise) as their main points of contact with regard to the implementation of Integrated Coastal Zone Management. This is explained by the lack of formal spatial planning competences at the regional level (I_P1). At the same time, it was perceived that the discussions on Integrated Coastal Zone Management were 'dominated by scientific perspectives'. Local mayors, understandably, did not have the time or capacity to read such scientific texts and the translation of Integrated Coastal Zone Management into practice clearly required a different, more communicative or practical approach. Against this background, Integrated Coastal Zone Management was thus perceived as an additional task for the municipalities for which additional resources or personnel was not provided (I_P1). The most recent Spatial Development Plan for Schleswig-Holstein, published in 2010, makes explicit reference to Integrated Coastal Zone Management, stating that regional strategies should be developed in order to identify the potential sustainable use of the North and Baltic Seas (Innenministerium des Landes Schleswig-

Holstein 2010: 25). In practice, such regional strategies have not been initiated and Integrated Coastal Zone Management as a policy concept has been superseded and displaced by increased attention to Marine Spatial Planning (I_P1). Indeed, marine issues have not been addressed in any form within the regional spatial development plans but dealt with exclusively in the state level plan: "The regional plans end at the coast. We have no marine area there. Most uses in the sea area [...] are so large-scale that we can handle them conclusively in the state development plan" (I_P1).

Preparations are currently underway for a comprehensive revision of regional and state level spatial plans in Schleswig-Holstein, including a realignment of regional planning boundaries. This revision of regional plans could potentially provide an opportunity to address marine issues at the regional scale. Within the context of an expert forum organised to support this process, an official from the Ministry for the Environment has identified extensive areas at risk of coastal flooding at both the North Sea and Baltic Sea coasts. The new regional plans are expected to include priority areas for coastal protection but not flood retention areas.⁹ The inclusion of 'Priority Areas for Coastal Protection' reflects the fact that coastal protection in general has priority above other policy interests in Schleswig-Holstein. Such priority areas are generally narrowly defined to allow sufficient space for dyke construction in future years. They do not imply a risk of coastal flooding to lands behind the dykes. The regional plans are however, expected to include reference to the need for awareness-raising with respect to coastal flood risks. The role of spatial planning in relation to coastal protection is interpreted with reference to the formal division of competences between the policy sectors: "We are actually, in the main, only responsible for securing areas of land in which coastal defence has priority. Whatever that looks like. The actual sectoral planning has always rested with the respective sectoral policy area" (I_P1).

Here the role of spatial planning is interpreted very narrowly in terms of securing spaces for specific functions, excluding the possibility of a strategic, cross-sectoral communicative approach. Below we briefly examine the approach to Integrated Coastal Zone Management of the coastal protection policy sector.

⁹ Personal communication, February 2018.

5.5 Schleswig-Holstein: ICZM from the Perspective of the Coastal Protection Policy Sector

The concept of Integrated Coastal Zone Management had, in fact, been adopted at an earlier stage within the coastal protection policy sector. An advisory council on 'Integrated Coastal Protection Management' (ICPM) was established in 1999 and a masterplan on the same topic was prepared in 2001 (Hofstede/Probst 2002). The term 'Integrated Coastal Protection Management' was chosen in deliberate reference to Integrated Coastal Zone Management but also with the intention of emphasising the specific interpretation implied in this context. Integrated Coastal Protection Management is defined as a "continuous and dynamic process through which decisions regarding the protection of people and property at the coast from the natural dangers of the sea are made" (Hofstede/Probst 2002: 3). The perceived association of Integrated Coastal Zone Management with an ambition to integrate all interests at the coast in a comprehensive manner is, however, rejected: "ICZM claims to regulate all matters concerning the human and natural environment in the coastal zone in a comprehensive or holistic manner. It is questionable whether this ambitious approach could be applied in the densely settled coastal regions of northern Germany" (Hofstede/Probst 2002: 3).

The concept of Integrated Coastal Protection Management formulated here is centred on coastal protection. Integrated Coastal Protection Management is understood as a task to be conducted by the authorities and agencies with formal responsibility for coastal protection, with the integration or consultation of selected other interests as required to implement coastal protection objectives (Hofstede/Probst 2002: 3). An interviewee from the coastal protection policy sector, centrally involved in the development of the concept of Integrated Coastal Protection Management, expressed his unease with the informal character of Integrated Coastal Zone Management and his preference for more formal instruments: "ICZM is not a task as such, it is just a philosophy for working with the coast [...] a philosophy about how you work together [...] That was my problem with this" (I_C2). The concept of Integrated Coastal Protection Management is carried forward in the most recent General Plan for Coastal Protection where it is stated that Integrated Coastal Zone Management is implemented in Schleswig-Holstein through Integrated Coastal Protection Management (MELUR 2012: 9). Here the integrative, cross-sectoral formulation of

Integrated Coastal Zone Management in the framework concept is displaced by a more narrowly framed sectoral interpretation (see also Walsh 2019). The ICPM Advisory Council, which remains in place at the time of writing, includes political representatives from the community, district and federal state levels of governance in Schleswig-Holstein as well as representatives of nature protection organisations and drainage associations. Spatial planning officials are not represented on this council, notwithstanding a stated objective to improve public participation in decision-making on coastal protection issues. Reports of the meetings of this council are not publicly available. A marked degree of policy segmentation is thus evident in Schleswig-Holstein with respect to Integrated Coastal Zone Management, with different interpretations of the concept among officials in the spatial planning and coastal protection policy sectors. This may in turn be traced to clearly demarcated policy competences and a sharp division of responsibilities between the Ministry for the Interior¹⁰ and the Ministry for the Environment, but also to an imbalance of power relations between spatial planning and sectoral planning.

The significance of this division between the ministries and the restriction of spatial planning to the preparation and implementation of formal spatial plans became particularly evident with the preparation of a climate adaptation strategy for the Wadden Sea by the Ministry of the Environment. This strategy was characterised by a cross-sectoral integrative approach encompassing both coastal defence and nature conservation concerns within one strategy and including non-government organizations directly within the strategy-making process (MELUR 2015; Hofstede/Stock 2018; Walsh 2019). Despite a notable focus on issues of place and space within the strategy (Walsh 2018), the spatial planning community was not represented in any way on the advisory board, steering or project groups of the strategy. In fact, the spatial planning officials in the Ministry were only peripherally aware of the process, not judging it to be substantially relevant to future state or regional level plans (I_P1).

¹⁰ Responsibility for spatial planning in Schleswig-Holstein has moved between the State Chancellery and Ministry of the Interior and State Chancellery multiple times, following changes of government.

6 Comparative Discussion

At the time of its introduction in both Lower Saxony and Schleswig-Holstein, Integrated Coastal Zone Management was understood as part of a shift towards a more integrative form of spatial planning with the capacity to work across traditional sectoral policy boundaries. In Lower Saxony, in particular, Integrated Coastal Zone Management was framed in formal planning policy statements as a means of integrating all relevant policy sectors, stakeholders and levels of government with regard to issues affecting the coastal zone. In Schleswig-Holstein, Integrated Coastal Zone Management was similarly understood as a cross-cutting task, of relevance to a wide range of sectoral policy areas. Whereas a coordination office for Integrated Coastal Zone Management was established within the spatial planning department, the role of spatial planning in relation to Integrated Coastal Zone Management was perceived more in terms of coordination and steering than in the development and implementation of an integrated comprehensive approach. Although the coastal waters were formally included within state-level planning policy statements in both federal states, considerable emphasis was placed on the local and regional levels of government as the appropriate scale for the implementation of Integrated Coastal Zone Management in practice. In both cases, the coastal zone was defined in a functional sense, as the area mutually influenced by the land and the sea. This particular interpretation of the coastal zone has a long history, and may be traced to work of human geographer Friedrich Ratzel who introduced the concept of a flexible coastal zone, in preference to that of a fixed boundary line (Ratzel 1909). Defining governance spaces in terms of flexible 'soft' spaces with blurred boundaries, however, may also be viewed as an innovative development in spatial planning, whereby flexible boundaries are thought to provide a way of moving beyond the constraints of rigidly defined administrative and jurisdictional boundaries and predetermined environmental boundaries (e.g. Haughton/Allmendinger/Counsell et al. 2010; Jay 2018; Walsh 2018). In the case of Schleswig-Holstein, the 2003 Framework Concept made further reference to informal governance spaces of the regional scale, introducing the prospect of regional governance arrangements, defined independently of formal planning regions or regional district (Kreis) boundaries.

Here, a sharp contrast between the ambitious objectives of policy officials at ministerial level and the reception of Integrated Coastal Zone Management

among spatial planners and other actors at regional and local levels becomes evident. Integrated Coastal Zone Management was perceived as an additional task without clear added value, indicating that the potential benefits of Integrated Coastal Zone Management as a collaborative, cross-sectoral approach to coastal management were not realised in practice. It is further evident that despite the rhetoric of the 2003 Framework Concept, the communal level was viewed as the principal focus for implementation of Integrated Coastal Zone Management by spatial planning in Schleswig-Holstein, reflecting the centralisation of regional spatial planning competences in the state. In practice, the remit and scope of spatial planning is understood in terms of what is possible through the preparation and implementation of formal planning instruments such as regional plans. From this perspective the role of spatial planning in relation to coastal management is defined in very narrow terms, with respect to the securing of areas of land along the primary dyke line for current and future coastal defence measures. This might be viewed as a support function for sectoral planning for coastal defence, which generally seems to be in a more influential and politically powerful position than spatial planning.

Institutional arrangements in Lower Saxony provide greater scope for spatial planning at regional (Landkreis) level to take on a cross-sectoral, integrative function. Both spatial planning and coastal protection functions are decentralised to a much greater extent than is the case in Schleswig-Holstein, providing opportunities for consultation and exchange of information on issues of coastal management on a more routinized basis. The dyke and drainage associations are recognised as key local actors with relevant expertise with regard to land management issues at the coast. From this perspective, the contention that Integrated Coastal Zone Management does take place, even without reference to this particular phrase, is perhaps understandable. It is nevertheless evident that longstanding issues continue to be a source of tension between coastal protection and nature conservation, such as the securing of areas of land for sand and clay extraction as required for the building of dykes. This indicates that conflicting spatial claims regarding the use of land in the coastal zone remain unresolved. Moreover, a very substantial time-lag is evident between the formulation of policy objectives at federal state level and their translation into regional spatial plans, limiting the capacity for meaningful dialogue across levels of government with regard to spatial planning objectives. The fact that retention areas for coastal flood risk have not been included within the regional spatial

plan for the district of Aurich is indicative of the need for regional-scale spatial planning to take account of local political sensitivities to a much greater extent than is the case at federal state level. That the necessity of such flood risk retention areas is questioned by actors within the coastal protection policy sector indicates perhaps both insufficient consultation across sectoral boundaries and a mismatch between idealistically formulated policy objectives and pragmatic realities 'on the ground'. At the same time, it may be argued that a key task of strategic spatial planning is to highlight and raise awareness of issues which may become significant in the long-term, irrespective of current political priorities.

7 Conclusions

This paper reveals a very significant mismatch between the ambitious objectives associated with Integrated Coastal Zone Management in planning policy statements in both Lower Saxony and Schleswig-Holstein and the much more limited role of spatial planning in relation to coastal management and marine governance in practice. This mismatch may be explained in terms of differing perceptions of the role of spatial planning in relation to other policy sectors. The formulation of Integrated Coastal Zone Management as a mechanism for the integration of all relevant interests, policy sectors and levels of government at the coast reflects a rational-comprehensive planning paradigm. Here it is either assumed that spatial planning is in a sufficiently powerful position to provide this overarching cross-sectoral integrative function, or alternatively that planning is a purely technical activity where negotiation between competing interests, values and perspectives is not necessary. At the same time, implementation is understood to take place through informal instruments requiring extensive consultation and dialogue across policy sectors and stakeholder groups. Since the 1970s, planning theory and practice has departed substantially from the rational-comprehensive paradigm, in recognition of the complexities and uncertainties inherent in the governance of urban and regional development in the contemporary context (c.f. Kühn 2008). These constraints place effective limits on the scope for a comprehensive planning approach. The experience of spatial planners at the North Sea coast with Integrated Coastal Zone Management indicates awareness that a rational-comprehensive approach is not feasible in practice. As a consequence, however, it would seem that planners have shifted to a very narrowly defined role

for spatial planning with respect to coastal management, focused on the preparation and implementation of formal planning instruments. This is evident most strongly in Schleswig-Holstein where coastal management is viewed as the domain of coastal protection and, to a lesser extent, nature conservation policy sectors. It is also possible that planners have in practice focused their efforts on those tasks required by legislation with a limited capacity to engage with Integrated Coastal Zone Management as an informal process based on voluntary agreements. Where this might be case, it may be necessary to address the mismatch between policy ambitions and implementation through a redistribution of resources.

Spatial planning, however, does have the potential to play a significant role in relation to the management of the coastal zone in the future. Contemporary challenges associated with climate adaptation, demographic change and sustainable economic development require a strategic spatial approach, taking due cognisance of the competing claims and rationalities of diverse groups of stakeholders. For spatial planning to take on this role, a paradigm shift is required towards an understanding of spatial planning as a strategic, communicative practice. This implies a focus on informal instruments, and collaborative, problem-oriented, multi-stakeholder governance processes rather than a reliance on formal instruments alone. Applied research projects such as EXTREMENESS demonstrate that it is both possible and necessary to initiate long-term strategic discussions, cutting across established sectoral and disciplinary boundaries and ways of viewing and making sense of the coast (cf. Walsh/Döring 2018). In place of a desire to integrate all interests and stakeholders at the coast, spatial strategies could provide a forum for dialogue with a selective focus on specific spatial priorities or unresolved spatial claims.

Perhaps more critically, there is an evident need for spatial planning policy and practice to integrate the coastal waters more fully in spatial strategies at both federal state and regional scales. Their inclusion to date has been limited to information provision only. The implementation of the MSP Directive will require the coastal states to explicitly address land-sea interactions, both in terms of infrastructural connections (e.g. cables, shipping lanes, maintenance of offshore wind farms and port activities) and soft relationships between land and sea. Marine Spatial Planning at the North Sea cannot be seen as an activity for the Exclusive Economic Zone alone. Rather, integrated perspectives and spatial visions are required, crossing the formal boundaries

between areas of federal, federal state, regional and local jurisdictional competence. Such spatial visions and strategies can form part of a broader dialogue concerning the relationship between the coast, Wadden Sea and North Sea beyond. Strategic spatial planning at the coast and at sea requires working through soft spaces, crossing both territorial-administrative and sectoral boundaries, recognising the full spectrum of socio-economic and socio-ecological interactions across this dynamic space (Jay 2018). It is imperative that the spatial planning research and policy community engages with the challenges posed by coastal management and Marine Spatial Planning, recognising the potential of both formal and informal instruments to strategically respond to contemporary demands and future challenges. In particular, there is considerable scope to draw on existing national and international experience in communicative forms of strategic spatial planning.

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