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Maritime Spatial Planning on land? Planning for Land-Sea Interaction conflicts in the Danish context

Abstract

Denmark is currently producing the first iteration of their Maritime Spatial Plan, as required by the European Union's Maritime Spatial Planning Directive 2014/89. Various conflicts have arisen during the process, particularly regarding a potential 'disconnect' between the maritime and terrestrial planning systems, with a lack of integration of planning decisions and processes carried out at sea and on land. The following article investigates the Danish approach to governing land-sea interactions, exploring the impacts of various institutional and procedural factors on the practice of planning at the land-sea interface in Denmark. We find that in Denmark, the maritime spatial planning process has priority over the terrestrial planning system, that there is a complex institutional set-up with a lack of integration between the maritime and terrestrial planning systems, and that there are conflicting perspectives about the importance of certain industries. The article hopes to draw out lessons useful for academics and practitioners alike, both on the Danish and international scale.

Keywords: MSP; LSI; institutional complexity; tourism; mariculture

1 Introduction

Recently there has been push to plan the seas, ostensibly to ascribe space for various activities while protecting other areas to preserve marine ecosystems and biodiversity (Jay, 2010; Portman, 2011; EU MSP Directive EU 2014/89). This creates an interesting challenge for policymakers and planning practitioners alike, who must navigate institutional, biological and social complexities. These complexities are particularly pronounced at the land-sea interface, where land-

sea interactions (LSI), the combination of socio-economic activities and natural processes that occur across the interface, create a particularly challenging governance area (Pittman & Armitage, 2016; Kidd et al., 2019; O'Hagan et al., 2020). In the context of the European Union (EU), LSI are mentioned as a key element of Maritime Spatial Planning (MSP). The EU MSP Directive (EU, 2014/89) acknowledges the close interrelation of maritime and coastal activities, stating that “[i]n order to promote the sustainable use of maritime space, maritime spatial planning should take into account land-sea interactions’ (EU 2014/89 § 16). However, despite repeatedly discussing and stating the importance of LSI in the EU MSP Directive (§9, §16, §18, art 1(2), art 4(2), 4(5), 6(2)(a), 7(1)), the Directive provides no clear guidance on how to do this, leading to a wide range of approaches (Kidd et al., 2019). With all EU member states required to establish and implement MSP, resulting in a maritime spatial plan or plans at the latest by 31 March 2021 (EU 2014/89 art. 4(1), 4(3), 15(3)), accounting for LSI is increasingly pertinent for European planners and policymakers, as is understanding the positive or negative implications of the various approaches used for integrating LSI in MSP.

Denmark is in the process of developing its first maritime spatial plan, which will cover Danish waters in the North and the Baltic Seas. The Law 615 (2016), containing the provisions for implementing the EU MSP Directive in Denmark, was in 2020 promulgated (*bekendtgjort*) with the LBK 400 (2020). In here it is specified that with a view to support the interaction between land and sea, MSP (*havplanlægning*) can aim to contribute to land development of significant social importance (LBK 400, §5-4). In recent years, Danish media has covered issues that could be seen as a disconnect between planning at land and at sea. One particular debate relates to mariculture and tourism off the coast of Djursland, a peninsula on the eastern coast of Denmark surrounded by the Kattegat Sea (Figure 1) (Danielsen, 2018; Ravn, 2018; Ritzau, 2018a; Søndergaard, 2018; Søndergaard and Troelsen, 2018; Fischer, 2019; Kattegatcentret, 2019; Lund, 2019). Citizens and members of the local councils in Djursland have considered the prospects of more mariculture off

the coast of Djursland, part of the forthcoming maritime spatial plan, a threat to the planning decisions made on land regarding tourism activities. Ole Bollesen, mayor of Syddjurs municipality had expressed hope that the forthcoming maritime spatial plan would take into account the interests on land, where among others tourism is important for Djursland (Lund, 2019). Calls have been made for having the “*sea and land play together in the planning*” (Mayor of Norddjurs municipality Jan Petersen, Reporter/Jacobsen, R., 2019).

[Figure 1 near here].

Using this case, the following article investigates the Danish approach to governing LSI, exploring the impacts of various institutional and procedural factors on the practice of planning at the land-sea interface in Denmark. By doing so, it is hoped to draw out lessons useful for academics and practitioners alike, both in the Danish but also an international context. Building on the recent discussions mentioned above, and based on preliminary desk research and literature review, the authors identified three facets of interest in Danish LSI governance resulting from the ongoing MSP process: the legislative approach taken to ascribing priority to marine and terrestrial interests; the differentiation between maritime and terrestrial planning systems in terms of institutional responsibility and scale; and the potential of conflict resulting from these characteristics of the Danish governance of LSI. These will be investigated using the following research questions:

How does the Danish approach to LSI treat maritime and terrestrial interests?

How are the Danish terrestrial and maritime planning systems differentiated in terms of institutional responsibility and decision making?

What planning conflicts are arising from the way that LSI are governed in Denmark?

We start with an account of how the complexities when planning for LSI have been accounted for in the existing review (Section 2), followed by the methods used for carrying out this research (Section 3), and the presentation of the case study (Section 4). Section 5 develops the three identified facets corresponding to the three research questions. The discussion (section 6) highlights potential areas of interest for the future Danish MSP system. The conclusion (section 7) gives the reader a concise summary of our key findings and includes some recommendations for the practice of planning for LSI to explore for further research.

2 Complexities when planning for LSI

The governance of LSI is an area ripe for planning conflicts due to the physical and institutional complexity inherent in coastal environments (Shipman & Stojanovic 2007). Coasts have been presented as the space where the interests of land-based and marine-based activities intersect, where developments amalgamate and conflicts and contradictions arise (Kerr et al., 2014; Gazzola et al., 2015; O’Hagan et al., 2020; Schlüter et al., 2020). The coastline is often used on maps to divide land and sea; however, this conceptual dichotomy has been criticised (Leyshon, 2018; Ehler et al, 2019); “separation between land and sea is an artificial exercise [...] giving rise to complex administrative and political questions” (Ehler et al., 2019, p3). We see that planning often struggles to incorporate considerations from both terrestrial and marine spheres (Alvarez-Romero et al, 2015), and is “hampered by the lack of overlap between management and scientific realms, marine and terrestrial systems, and different government agencies and stakeholder groups” (Reuter et al, 2016, p181).

There are concerns that land-sea dichotomies are being reinforced through the institutionalisation of MSP (Walsh, 2020), potentially impacting the effectiveness of coastal management (Shipman & Stojanovic 2007; Crawford, 2019; Walsh, 2020). Despite MSP being

considered by some as a panacea that can lead to truly integrated planning at the coast (Ehler and Douvère 2009), other authors view the notion that MSP can provide the mechanisms for land-sea integration with skepticism (O'Hagan et al 2020). In a critique of MSP, Ralph Tafon points to a gap between the transformative potential of the practice and the reality. He suggests that “the act of spatializing sea use may function to govern subjectivities and knowledges towards preconceived neoliberal MSP objectives and outcomes while marginalizing their alternatives” (2018, p270), and is unable to balance the different interests at sea in a “holistic, adaptive, objective, power-neutral and consensual way” (p261). Instead, MSP simply reinforces existing regimes and processes. This is problematic for the governance of LSI, which often fails to overcome barriers of complexity and differing scales (Bruckmeier, 2014; Pittman & Armitage, 2016; Van Assche et al, 2020). LSI is characterised by a plurality of interests and institutional complexity, which emerges both due to the continued absence of a clearly recognizable definition of LSI (Morf et al, 2019; ESPON 2020), and as previously mentioned, because the coastline is the space where terrestrial and maritime planning converge. According to Ritchie and McElduff it is “still not clear how MSP relates seamlessly to land use planning” (2020, p237), making the governance of LSI that potentially traverse marine and terrestrial planning systems complicated.

Different approaches for managing LSI have been identified: modalities range from maintaining a separate maritime and terrestrial planning system (e.g., England), to terrestrial plans extending into maritime area (e.g., France, Germany), or national strategies covering both terrestrial and maritime areas (e.g., the Netherlands, Malta) (Kidd et al., 2019). It has also been suggested that LSI “*could be addressed by extending the remit of MSP inland, in contrast to extending a terrestrial planning area seawards. However, this is not an approach that appears to have been adopted so far*” (ibid, 2019 p. 260). More recently there has been a call for another type of planning system, in which rather than distinct terrestrial and maritime governance systems, there is instead a dedicated

coastal governance that would help accommodate the reality of land-sea interactions (Schlüter et al. 2020).

At the same time, it has been acknowledged that there is often a gap in understanding the consequences of these different approaches, that is, the consequences of the variety of legislative and institutional arrangements used to address the LSI dynamics with their different configurations in terms of land-sea coverage and operation at different spatial scales (Kidd et al, 2019). According to O’Hagan et al, “LSI governance exists at multiple scales, and is complex and often non-linear in delivery, with constantly changing interplay between different spheres of legislative control, institutional hierarchies, and social drivers and values” (O’Hagan et al, 2020, p2). They further posit that there is still work required to ensure the success of interactions between legal instruments at the coast, as well as to overcome ‘mismatches’ in the scale of different pieces of legislation governing the terrestrial and maritime elements of the coast. (ibid, Kerr et al, 2014). The physical location of LSI governance, as well as its scale (local, national, etc.) has the potential to influence both decision-making and the interrelation between plans and planning systems. Ehler et al 2019 express concern that decisions relating to MSP “are being made in metropolitan centres away from the coast” (Ehler et al, 2019, p.3), and Kidd et al (2019) suggest that a disconnect between scales of governance hampers effective response to LSI. Critical for addressing conflicting governance frameworks is the understanding of the conditions that affect how MSP institutions are adopting or adapting MSP policies (Ansong et al 2020). The Danish approach to this problem and its implications for the governance of LSI is the focus of the remainder of this article.

3 Methods

A mixed qualitative methods approach, including a literature review, desk research and semi-structured interviews was used to carry out this research. The literature review explored current MSP and LSI governance perspectives, highlighting potential areas of interest. The

information gained from this review informed the selection of facets to investigate, as well as serving to contextualize the Danish approach.

Desk research included the analysis of policies, planning documents, policy debates, and newspaper articles/media. Newspaper articles were collected for the time period 2017-2020 following a chain-referral approach on the topic of plans for mariculture in the Kattegat. The collected material was analysed in its original language (Danish) and translations included in this article were conducted by the authors. Translations of the Danish MSP Law (Lov 615, 2016) were obtained from DMA (2016) being attentive of course to the changes introduced in LBK 400 (2020).

Key informant interviews were held with actors involved in the MSP process in Denmark (DK interview 1, 2020, DK interview 2, 2020) and in Finland (FI interview, 2020) between September and October 2020. Email exchange took place with local municipal planners (Planner 1, 2020; Planner 2, 2020) in September 2020. Persons were selected on the basis of our desk research, using a snow-ball approach. They were considered informant voices that could help clarify the findings of our desk study. Interviews were used both to corroborate the findings of desk research and to explore the three research questions.

4 Conflicts of interest at the Djursland coast

Discord between planning at land and sea on the Djursland Peninsula has been reported in the Danish Media, particularly relating to the mariculture and tourism industries. Around 80,000 people live on the Djursland Peninsula, governed by two municipalities, Norddjurs and Syddjurs (see Figure 1). Tourism is a key element of the local economy, which local communities are keen to exploit in the future. The Peninsula contains the Nationalpark Mols Bjerger, a key tourist attraction, and the varied nature and sandy beaches are also attractions for a tourist industry which has been growing at around 3% a year

(Syddjurs Kommune et al, 2016), constituting around 8% of the total tax revenue on Djursland (ibid, p1). The mayor for Syddjurs municipality Ole Bollesen has expressed the importance of the sector to the area '*Tourism means a lot economically in Syddjurs, and it is increasing wildly at the moment*' (Carlson, 2018). Norddjurs and Syddjurs municipalities have regularly produced a joint tourism strategy, and as of 2019 this effort has been consolidated with the local Aarhus municipality. The Djursland strategy from 2016 details, '*a focus on coastal holiday tourism as the most important source of turnover and development*' (Syddjurs Kommune et al, 2016, p15), and describes an existing '*well-established coastal holiday product with many opportunities for accommodation and experiences.*' (ibid, p15). In the current combined tourism strategy from *Visit Aarhus* (a local branch of the national tourist board), one of the key aims is to build capacity for overnight stays, with a continued focus on coastal holiday tourism, with 'coast and nature' described as the main attraction of the Djursland area (VisitAarhus, 2018). It is hoped to capitalize on this attraction by building more summerhouse and hotel options (ibid, p17), as well as improving the ferry connection to Sweden (ibid, p21).

The forthcoming maritime spatial plan involves the opportunity for more mariculture off the coast of Djursland. Plans for an increase in mariculture in the Kattegat go back to the 2015 Food and Agriculture Package (*Fødevarer- og landbrugspakken*) (Miljøstyrelsen, n.d) which aimed to exploit the potential of the sector (Miljøstyrelsen, n.d.3). However, citizens and members of the local councils in Djursland consider the prospect of mariculture as part of the MSP as a threat to planning decisions made on land regarding tourism activities (Danielsen, 2018; Hansen, 2019). Concerns relate explicitly to the impacts on the quality of bathing waters and recreational fisheries derived from the operation of the mariculture farms (Søndergaard & Troelsen, 2018), and the potential for industrial/farming debris to end up on the shore (Danielsen, 2018). Jan Petersen, mayor of Norddjurs municipality, demonstrated concern over the spillover effects derived from the expansion on mariculture in the Kattegat, "We can risk that it can negatively impact tourism and

recreational things, and it will be a big problem for Djursland and Anholt” (Fischer, 2019). Excessive discharges emitted from mariculture will potentially cause eutrophication, impacting tourism (Søndergaard 2018, Søndergaard and Troelsen, 2018). Mariculture is on the Environmental Ministry’s (*Miljøministeriet*) list of polluting activities (Miljøstyrelsen, n.d1), and requires environmental approval before it is established (Miljøstyrelsen, n.d; n.d3; 2017b). In addition to this, specific rules apply depending on the location of the farm in relation to the coastline (Miljøstyrelsen, n.d). Issues regarding the number of authorities that are involved in the management of mariculture have been acknowledged. As of June 2020, the supervision (*tilsynet*) of the 19 mariculture farms that exist in Danish waters is spread over eight different authorities (Ritzau, 2019; 2020). Assessment of the location of the mariculture farms was made on the basis of optimal location for the facilities in relation to infrastructure, water quality, and water current conditions (Miljøstyrelsen, n.d.3), as well as on the basis of environmental criteria i.e., discharge of nitrogen and phosphorus into the aquatic environment. The Kattegat was, among the explored locations, the area that, according to the studies made in 2014 (Miljøstyrelsen, n.d2), had best capacity to absorb the increased emissions of nutrients- in other words there was ‘environmental space’ (*miljømæssigt råderum*) for mariculture (Miljøstyrelsen, n.d3; Søndergaard, 2018b). As explained on the Ministry of Environment’s webpage “*The primary obstacle to growth in Danish mariculture production is that mariculture emits nutrients to the aquatic environment. There are only a few places in Denmark where it is possible to allow an increased discharge of nutrients to the marine environment*” (Miljøstyrelsen 2017a).

There has also been some concern among citizens and authorities in Djursland regarding participation in the decision-making process. On several occasions it has been clarified that, as part of the MSP process, the Ministry of Industry, Business and Financial Affairs (*Erhvervsministeriet* - hereafter referred as the Ministry) will consult other Ministries as well as coastal municipalities and regions, and relevant business and organizations (Ramírez-Monsalve & van Tatenhove, 2020).

However, there exists a feeling of exclusion among various municipalities and interest organisations (Danielsen, 2018; Lund, 2019) as they have not been involved in the process ‘*It is important that we have co-determination, because it is us municipalities that live off the fact that the coasts are in good condition*’ (Ole Bollesen, mayor for Syddjurs municipality, Danielsen, 2018). Since 2015 mariculture has been highly debated (Hansen, 2019), and by the end of 2018 the Minister of Environment had started a thorough review of the sector after several problems had been identified (Ritzau, 2018a; 2018b; 2019) which culminated with the announcement, in the second half of 2019, that mariculture will not be granted additional permits (Olsson, 2019). Instead, options for having mariculture on land were to be considered (Hansen, 2019; Otte, 2019; Hegland et al., 2020).

The conflict between the two sectors described above provides a useful example for a discussion of the implications of the Danish approach to governing LSI, and will be used to illustrate the points made in the rest of the article. The following section both presents this approach and explores how it impacts the governance of the coastal zone.

5 Danish MSP and LSI: Problems in Practice?

Planning and development on land (terrestrial planning) in Denmark is covered by the Danish Planning Law (*Planloven* LBK 1157, 2020). Terrestrial planning, which, excluding special circumstances, extends until the Danish Coastline but not beyond (See Figure 3), is a hierarchical four level system; national planning (*Landsplanlægning*), regional planning (*Regional planlægning*) (also including sectoral planning derived from, among others, EU legislation), municipal planning (*Kommunal planlægning*) and at the finest detail local planning (*Lokalplanlægning*) (see Figure 2).

[Figure 2 near here].

Within the nationally ascribed planning framework, municipal and local plans determine what development can occur on land. This includes the ‘near coastal zone’ (*kystnærhedszonen*) (see Figure 3), the 3 km inland from the Danish Coastline where special development rules apply as required by the Danish Planning Law (Miljøministeriet, 2011). Certain instances require municipal and local plans to include areas beyond the coastline, for example port or other infrastructure facilities (LBK 1157, 2020 §5b,2).

[Figure 3 near here].

In terms of maritime planning, the area beyond the coastline (*kystlinjen*) is currently covered by various sectoral plans and regulations (including the Marine Environment Protection Act, the Raw Materials Act, the Subsoil Act, the Continental Shelf Act, the Electricity Supply Act, the Harbour Act, the Act on Safety at Sea and the Fishery Act (Ivarsson et al., 2017; Hegland et al. 2020)). Denmark’s marine area is divided into territorial waters (*søterritoriet*) consisting of the inner and the outer waters, and the exclusive economic zone (EEZ) including areas adjacent to the territorial waters up to a distance of 200 nm from the baseline (Hegland et al., 2020). Upon implementation, the spatial planning of the area beyond the coastline (seawards) will be addressed by the MSP, the first comprehensive plan for Denmark’s marine area

At the same time, some plans for specific considerations apply on both sides of the coastline (e.g., Water Framework Directive (WFD), Water Plans (*Vandplaner*), Risk Management Plans (*Risikostyringsplaner*), and Natura 2000 areas (Andersen et al., 2020; Miljøministeriet, 2009)). On its introduction, it is expected that the maritime spatial plan will allow greater coordination between activities conducted in the marine space, serving as a consolidated spatial planning of the marine space that allocates specific areas to different uses. However, various sectors, including environmental protection, will remain managed under the different sectoral acts and regulations,

and under dispersed administrative levels of decision-making (Ramírez-Monsalve & Van Tatenhove, 2020). The following sections will explore the impacts of the institutional set-up for the governance of LSI in Denmark, that is to say, how interactions between these two planning systems influence the practice of planning at the land-sea interface.

The Danish Planning Law aims to ensure coherent planning that combines social, economic, and environmental interests, and create a good framework for growth and development throughout Denmark (LBK 1157, 2020 §1). The MSP sets a framework for the planning of the Danish marine areas in order to promote economic growth, the development of marine areas, and the use of marine resources on a sustainable basis (LBK 400, 2020 §1). While the aims appear broadly coherent, there are differences in the prioritisation of various industries, and approaches to achieving their goals (See sections 5.2 and 5.3), potentially leading to inconsistent decision-making and inefficiencies in the governance of LSI (as described by University of Liverpool, 2016; Ansong et al., 2020; ESPON, 2020; Hegland et al., 2020; O'Hagan et al., 2020).

5.1 The Prioritisation of Maritime over Terrestrial Planning Interests?

Kidd et al. (2019) discuss the different potential approaches to legislative and institutional arrangements for addressing LSI. One of the different possibilities they raise is the idea of extending the remit of MSP inland, but, they write, while it is technically possible, it *'is not an approach that appears to have been adopted so far'* (Kidd et al, 2019: p260). The Danish approach casts some doubt on this, intentionally or otherwise creating a system in which the MSP (and the maritime planning system) has priority over the terrestrial system and (as such) the potential ability to determine planning and development along the Danish coast. Article 14 of the Danish MSP Law reads,

“With the exceptions mentioned in articles 15 and 16, government (statslige) and municipal (kommunale) authorities shall not, in accordance with other legislation, adopt plans for or grant

permission, etc. for installations or area uses which are contrary to the maritime spatial plan, or are contrary to a proposal for a maritime spatial plan or amendments of the maritime spatial plan published by the Minister of Industry, Business and Financial Affairs.” (LBK 400, 2020 §14-1).

Indeed, it is also clear from the Planning Law that neither municipal nor local plans may contravene the Maritime Spatial Plan:

“The municipal plan must not conflict with [...] the maritime spatial plan in accordance with the Maritime Spatial Planning Act or proposals for a new maritime spatial plan or proposals for amendments to the maritime spatial plan when the proposal has been published for consultation.” (LBK 1157 of 01/07/2020 § 11, 4 no. 8),

“The local council may provide local plans in accordance with the rules in Chapter 6. A local plan may not conflict with [...] the maritime spatial plan in accordance with the Maritime Spatial Planning Act or a proposal for a new maritime spatial plan or a proposal for amendments to the maritime spatial plan when the proposal has been published for consultation.” (LBK 1157 of 01/07/2020 § 13, 1 no. 9).

This situation was also confirmed during our interviews, during which it was stated that “*as a general rule you cannot do anything that is against the maritime spatial plan*” (DK interview 1, 2020). There are, however, some exceptions- namely if the planning action is taken in order to comply with EU or international obligations, or is deemed too urgent to await amendments to the plan. (LBK 400, 2020 §15, 1-2). This creates impacts for decision making in various ways.

Firstly, it is important to remember that terrestrial planning (with its national, regional, municipal, and local levels) determines which developments can occur until the coastline (see Figure 3). Municipalities have planning responsibility, and, through the use of local-plans, are able to control development (although this is somewhat mediated by the “near coastal zone”

(*Kystnærhedszonen*)). On the other side of the coastline, and out to sea, a central government Ministry has planning capacity, and the power to control development. Because the MSP has priority (as stated in the LBK 400, 2020 §14-1), any intervention that applies to both sides of the coastline (see Figure 3) could be decided by the Ministry. As explained by our interviewees, as the central state has priority over decision-making, and other interests, both municipal and private, must ‘stand in the queue’ (DK interviews 1, 2020). Danish sea territory ‘belongs to all’, so the central state is responsible for this resource being administrated correctly (DK interview 1, 2020; Hegland et al., 2020). In other words, the MSP would end up having authority over an intervention that applies to both sides of the coastline, if such intervention is proven to be contrary to the maritime spatial plan or to a proposal for it. It would mean, for example, that smaller-scale development and planning projects, derived from municipal or local planning, could be overruled by the MSP- potentially an indirect consequence, but nevertheless one that would have an impact for decision making at the local level.

Decision making will also be impacted at a larger scale. The MSP will designate large areas to ‘promote economic growth, the development of marine areas and the use of marine resources on a sustainable basis’ (LBK 400, 2020 §1-2). These areas include, among others, shipping routes, wind-farms, and locations for mariculture. While these areas may appear as discrete objects on a GIS map, in reality their impact may spread much further. For example, offshore windmills and mariculture both have a visual impact, potentially also from land, and mariculture creates biological changes in water, as well as potential debris that can end up on the coast (Campbell et al, 2017). It is impacts like these which were perceived by the citizens and members of the local councils in Djursland as threatening the planning decisions made on land regarding tourism activities (Danielsen, 2018; Hansen, 2019). In other words, the municipalities that rely on and would like to expand the tourism sector may be somewhat handicapped by decisions taken by the central government. Consequences such as these mean that the MSP has the potential to influence planning

and decision-making ‘on land’, an argument also supported by (DK interview 2, 2020)- the MSP is legally prioritized over terrestrial planning, and decisions such as the allocation of space for various uses will be definitive and out of the control of municipalities on publication.

5.2 Differentiated Terrestrial and Maritime Planning Systems

In Denmark, ‘*the framework for planning and management at sea is simply different than on land, and this creates challenges and limitations*’ (Hegland et al., 2020: 48). The maritime and terrestrial systems have a “siloe” nature, occupying different institutional and policy spaces. The Ministry of Industry, Business and Financial Affairs (*Erhvervsministeriet*) has overarching responsibility for both terrestrial and maritime planning, although the responsibility lies within two of its different authorities. While the Danish Maritime Authority (*Søfartsstyrelsen*) has the responsibility for the preparation and coordination of the MSP, the Danish Business Authority (*Erhvervsstyrelsen*) has responsibility for planning and development on land. However, the interaction between these two authorities is yet unclear for municipal actors. It has been reported that a large number of authorities ‘*come into play in connection with projects on the coast, where land and sea-related interests and activities overlap*’ (Hegland et al., 2020 p. 42) and that the communication and cooperation between the authorities takes place both in an *ad hoc* and planned manner (Hegland et al., 2020). During the consultation process of the MSP Law the Ministry commented that “*there is no risk that initiatives that include both land and water would be slowed down, even if two or possibly several different authorities must deal with the same case and grant permits*” (Høringsnotat, 2015 p. 8). Despite this, concerns have manifested regarding the lack of clarity of the planning system, the processes between the Maritime and Business authorities, as well as the processes between the Maritime authority and the municipalities (DK interview 1, 2020).

The two systems have key differences regarding responsibilities for planning and implementation. The terrestrial Planning Law (*Planloven* - LBK 1157, 2020) shares responsibility

for planning between the Business Authority (*Erhvervsstyrelsen*) and the municipalities. While the Business Authority provides general guidelines for planning through the writing and updating of the Planning Law, ‘*it is the municipalities’ task to translate the general guidelines and visions for actual physical planning through municipal plans and local plans*’ (PlanInfo, 2018). However, while the Ministry again provides the *raison d’etre* and general guidelines for the Danish MSP, it is not the municipalities who are responsible for their orientation in a physical or spatial maritime plan, but the responsibility of the Danish Maritime Authority (*Søfartsstyrelsen*). That is to say, in terrestrial planning the central Danish Business Authority is responsible for the creation of general planning guidelines, which municipalities have the responsibility of translating into physical or spatial terrestrial plans. Whereas in maritime planning the central Industry, Business and Financial Affairs Ministry is responsible for the creation of the planning guidelines, and a nested organization, the Danish Maritime Authority, has the responsibility of translating them into physical or spatial maritime plans, without inclusion or participation of the municipalities. This means that responsibility for and power in planning is situated in different *loci* and scales across the two systems, which meet at the coastline. Furthermore, the two systems operate at “*completely different levels of detail [...], on land you have municipal plans and local plans, which are very detailed, whereas the new maritime plan lays out large areas to various uses*” (DK interview 1). This presents a potential barrier for integrating the two planning systems, which currently lack integration both institutionally and practically with regards to planning for LSI.

This lack of integration has been further hindered by a lack of clear communication and collaboration between the different sectors and scales of Danish governmental authorities during the MSP process. This was confirmed during our interviews, with the MSP process being described as ‘secretive’ (DK interview 1, 2020). There is uncertainty surrounding the processes that will be in place for future planning and decision-making, “if you can all of a sudden complain about something on land that could have an influence on the planning on water, for example a bathhouse,

can you complain about the whole MSP? That I cannot work out. What does it mean? We need to understand this” (DK interview 1, 2020). “what happens when [the state] realises that they that need all the space [allocated to a use for example offshore windfarms or mariculture]? Is it just released? (ibid). These responses support the idea that municipal actors have not been kept well-informed about some important details of the MSP, which has implications for their ability to plan ahead, and how to successfully navigate the two planning systems. Municipalities have felt somewhat excluded from the MSP process up until now (Carlson, 2018; Andersen 2020), and are unclear about what processes and protocols will be in place in the future that will allow them to influence what happens at sea.

It has earlier been acknowledged that issues associated with the resources available to the Maritime authority have had an influence on the openness and transparency of the process (Ramírez-Monsalve and van Tatenhove, 2020; Hegland et al., 2020). In addition, when we contacted local planning departments in order to carry out interviews, we were met with responses such as “the MSP has not been through consultation and is still very vague” (Planner 1, 2020) and that “the MSP is only in its start-up phase, and we have therefore not gained experiences of any issues” (Planner 2, 2020). The fact that relevant municipal actors were still this unclear about the content and implications of the plan six months before its introduction reflects an overall lack of oversight among both municipal actors in the terrestrial planning system and the Danish Business Authority. It also reflects a lack of integration between the two planning systems, also highlighted by Kirkfeldt et al., (2020). While the Danish Maritime Authority has involved representatives from 16 Danish maritime authorities in the MSP process (Søfartsstyrelsen, nd.), municipalities themselves have felt somewhat excluded from the process; Ole Bollesen, mayor for Syddjurs municipality, does *‘not think that we [the municipality] have been properly informed by the state about the maritime spatial plans’* (Carlson, 2018), and feel that their perspectives have not been listened to (Andersen, 2020). This frustration among municipal actors in the Djursland

regions has led to the development of an ‘*alternative MSP for the Western Kattegat*’, spearheaded by Djursland organisation *Bæredygtig Kystkultur* (Sustainable Coastal Culture) which will be taken to the hearing of the official MSP at the beginning of 2021. Nine municipalities, including Norddjurs and Syddjurs *Kommune*, have come together to produce an alternative ‘*research-based*’ marine plan (Andersen, 2020 *Bæredygtig Kystkultur*, n.d.). This plan will include ‘*outdoor life and tourism interests, with a mapping of areas of interest and hot spots as well as an economic analysis of the importance of coastal recreation and marine/coastal tourism, with the idea of designating specific areas for leisure activities*’ (*Bæredygtig Kystkultur*, n.d., p3). The actors believe that ‘*the national [MSP] will omit important areas because the coast and coastal tourism are not included in it*’ (Andresen, 2020a). In the words of Jan Petersen, Mayor of Norddjurs, ‘*We want to influence how the maritime territory along our coasts is used. So, we decided that we would provide a better professional basis for being able to react. The whole foundation is that the sea must be clean and that what we choose to do at sea influences with what we do on land*’ (Andersen, 2020). Unimpressed by the efforts of the central Danish Maritime Authority, municipalities have taken it upon themselves to produce a plan receptive to local expertise and needs.

The complicated institutional set up at play is in part related to the state sovereignty (*statens høghedsret*) over Danish waters, and to complicate matters further, it is the Ministry of Environment which has ultimate decision-making power over the territorial waters (*søterritoriet*, see Figure 3) (Lov 705, 2020, §16a). While municipalities have the ability to plan in their own geographical bounds, the sea in Denmark is ‘owned by all’, and as such it is the state that has the right to decide how the sea territory is used (DK interview 1, 2020, DK interview 2, 2020; Hegland et al., 2020). As explained during our interviews, “*it is historical that we have chosen to say on land it is the municipalities and we will not give it away, the municipalities are still allowed to plan in their own geography [...] and so there it is because that water it is public property, everyone owns the sea, and so therefore it is the state [that decides out on the water].*” (DK interview 1, 2020).

The Danish approach to MSP has not sufficiently accounted for this issue, resulting in a complex and siloed institutional set up that struggles to deal with the reality of LSI. The current institutional set up, with distinct maritime and terrestrial planning systems and a lack of integration across the coastline does not translate into reality- as stated by Jan Petersen, '*what we choose to do at sea plays with what we do on land*' (Andersen, 2020).

5.3 Coastline as the Space Where the Different Priorities of the Two Planning Systems Collide

Denmark's institutionally complicated approach to planning the sea, and particularly the way that the LSI is treated, has led to uncertainty and will potentially create inefficiencies in the future. The approach, characterized by allocating responsibility for planning on either side of the coastline to different institutions, is further complicated by differing priorities with regards to growth and economic development.

The position of Danish terrestrial planning regarding planning and growth has changed over the last couple of decades. Discussing recent developments in Danish planning discourse, Olesen and Carter (2018) note that '*[terrestrial] planning is increasingly being geared towards generating growth, and how, as a consequence, planning regulation is then increasingly being framed as a barrier for growth*' (p691). Historically, planning in Denmark has striven for equal development across the country (Carter et al., 2015), and the Planning Law seen as a tool to promote this equal development. Since the 2000s however, urban entrepreneurialism has been encouraged and reinforced by structural reforms (Carter, 2011), and the discourse post 2008 financial crisis moved towards planning as being a barrier to growth, as opposed to a means of promoting equal growth (Galland & Enemark, 2015; Olesen & Carter 2018).

In contrast to the position reflected in Danish terrestrial planning discourse and law, i.e., that spatial planning is a restriction on growth and that deregulation is required to achieve growth, Danish MSP Law proposes the spatial planning of Danish seas as a means of achieving

economic growth. The first of the four aims of the Danish MSP Law is to ‘*promote economic growth, the development of marine areas and the use of marine resources on a sustainable basis*’ (LBK 400, 2020 §1). This will be achieved through the spatial planning of the seas, with section 7 of the law on MSP reading, ‘*In order to achieve the goals stipulated in section 5 [the sustainable development and coexistence of various maritime sectors and uses], the Minister for Industry, Business and Financial Affairs shall determine the physical and temporal distribution of relevant existing and future activities and uses in the maritime spatial plan.*’ (LBK 400, 2020 §7). While the approach of the terrestrial planning system has been to devolve and liberalize spatial planning, moving away from a central spatial planning, the approach of the maritime system has been to achieve growth through spatial planning, allocating sections of the sea to particular uses in a centralized and top-down process.

The problematic nature of having two contrary approaches meeting at the coastline can be illustrated by the conflicts that arise between terrestrial planning on tourism, and mariculture as part of MSP. On the terrestrial side of the coastline, the development of a ‘*planning as a barrier to growth*’ discourse has been supported by a storyline specifically referring to coastal development and tourism (Olesen & Carter, 2018), in which it is suggested that blanket coastal protection is no longer justified. Previously, there was a total ban on development within 300 meters inland of the coastline, and special dispensation required for development within 3 kilometres (Miljøministeriet, 2011, p4). Changes to these elements of the Planning Law are proposed in the white paper *Growth and development in the whole of Denmark (Vækst og udvikling i hele Danmark)*. This white paper proposed a liberalization of the Planning Law to stimulate growth in local areas, justified in part by the notion that, ‘*[individual municipalities] know the quality of the local landscapes, the environment and nature, and they understand the local potentials for growth and development better those in Copenhagen*’ (Regeringen, 2015, p. 49)- an attitude not reflected in the Danish MSP process. On the basis of the above, the white paper elaborates that there should be ‘*greater*

municipal freedom to plan along the coasts' (ibid, p. 11). This has resulted in local municipalities having the ability to designate 'development areas' within the near coastal zone (*kystnærhedszonen*) with permission given to 10 tourism related coastal development projects, which would not be subject to ordinary coastal protection regulations (ibid). On the other side of the coastline, the centrally oriented Danish Maritime Authority treats tourism as a "may" sector, being in a less competitive situation in relation to mariculture as a "shall" sector (Ramírez-Monsalve & van Tatenhove, 2020). In other words, tourism is one of the sectors that "may" be planned in the upcoming maritime spatial plan, and is secondary to mariculture which is considered one of the sectors that "shall" be planned in the upcoming plan.

In Djursland, an area with a large tourist industry identified as being a focus and driver of growth in the future, the terrestrial planning system's rhetorical and policy support for expanding coastal tourism has been seized upon. The growth of tourism is reflected in strategies (VisitAarhus, 2018) and municipal and regional plans (Syddjurs et al, 2016), and Norddjurs Kommune won dispensation to develop along the coast at Fjellerup Strand as part of the Danish Business Authority's deregulation of coastal protection laws to stimulate tourism in Denmark (Regeringen, 2015). Described as having the potential to strengthen existing tourism in the area as well as attract new Danish and foreign visitors (Olsgaard, 2015), these plans, which rely on an attractive natural/coastal environment, would not under normal circumstances be allowed due to national coastal protection laws (Miljøministeriet, 2011). However, the implementation of the MSP, coordinated by the Danish Maritime Authority, will potentially hamper these efforts. As well as missing out on the opportunity to co-ordinate on a collaborative and cohesive tourism strategy due to a siloed institutional set-up, the MSP potentially detracts from tourism boosting efforts by planning for the establishment of mariculture. The focus on the establishment of such sea-uses could negatively impact a coastal tourism industry based on nature. This has not gone unnoticed by

local actors, including the mayors of both Norddjurs and Syddjurs (Andersen, 2020; Carlson 2018).

6 Discussion

The Djurslund case has highlighted some of the pitfalls of the Danish approach to LSI thus far. Two separate planning systems exist, with one accorded priority over the other. Because the locus of planning power and decision-making for either side of the coastline differs, both in terms of location and scale, effective spatial and strategic planning for the LSI area is difficult to achieve. This is highlighted by the conflicting priorities of Djursland municipalities and the central-state Danish Maritime Authority, which collide at the coastline. The municipalities have little influence on the MSP, and a lack of communication throughout the MSP process means that the Djursland's efforts to grow tourism are at risk of being hampered by spatial planning decisions taken by a central state organisation. In this way, intentionally or otherwise, the MSP is actually impacting and potentially determining planning and economic decision making on land. The complex institutional set-up, lack of integration between the maritime and terrestrial planning systems, and form of the MSP as a legally binding maritime spatial plan prioritised over municipal (terrestrial) planning, has led to conflict and stakeholder frustration. It seems to be an ineffective means of planning for LSI, which does not reflect the physical reality, that is, the fluid and interconnected nature of the spaces either side of the coastline.

Our literature review explored different techniques and approaches to MSP, with the hope of revealing some lessons learned from other contexts. The approach of Finland appeared particularly illuminating, as it highlights potential areas of interest for the Danish system, aspects which could be explored in subsequent research. While the stated goals of MSP in Finland are the same as in Denmark (FI interview, 2020), in contrast to Denmark's central authority approach to MSP in Finland, *'the preparation and approval of the maritime spatial plan is the responsibility of the*

federations of the provinces whose territory includes territorial waters' (Law 482/2016 §67a).

Additionally, *'municipalities and regional councils have the planning mandate for their adjacent marine waters up to the border of the territorial sea'* (Backer et al, 2013 p. 94). This means that local councils have the legal ability and responsibility to plan both on land and at sea, importantly having planning authority across the land-sea interface. Additionally, the bodies that are doing the planning for LSI, *'have the advantage of already embedded marine responsibilities, and relevant contacts and planning practice'* (Morf et al, 2019, p. 38). Finland has three MSP's, which are produced at the regional level (FI interview, 2020). This more integrated approach to planning in the coastal zone reflects the idea that what happens at sea affects what happens at land, and vice versa, and furthermore that actors institutionally embedded in –and physically from– the area in which they are planning for, are likely to have a better understanding of the needs in said area. This approach has the potential to mitigate some of the issues of planning competence and the integration of local knowledge and perspectives that arose during the Danish MSP process, and resulted in a situation where responsibility is divided across the coastline.

One of the key differences of the Finnish approach to MSP is that the MSP itself is not legally binding (FI interview, 2020), as local authorities already have pre-existing land-use planning competences that extend into the territorial sea. In Denmark there is a lack of existing competences for marine planning at the municipal level- *"very few [planners] have worked with the coast and basically none have worked with the sea. We have a lack of knowledge, and it is big"* (DK Interview 2, 2020). As such, instead of trying to spatially allocate particular pre-defined uses (e.g. the LBK 400, 2020 §5-2 sectors), the Finnish approach has been to create a consensus around the future of the use of the sea, and what LSI will look like (FI interview, 2020). The pre-existing legal and institutional landscape has undoubtedly affected the role and requirements of MSP in Finland and Denmark. In Finland, planners have been able to use the MSP to collaborate with a wide range of marine stakeholders and municipalities to collate and present knowledge in a strategic vision,

without prioritising one use or another (Fl interview, 2020). This notion of collaboration and consensus appears to be missing in the Danish MSP process (Hegland et al., 2020), and without pre-existing municipal planning competences or a spatial plan for the sea, the Danish Maritime Authority has used the EU requirement of having a MSP to spatially allocate uses under a dominant discourse of ‘enhancing economic growth’ (Ramírez-Monsalve and van Tatenhove, 2020), according to the goals of the central government (i.e. to harness the “economic potential” of the sea through mariculture, windfarms, fishing, shipping, and mineral extraction). The lack of communication and collaboration seems to have led to stakeholder frustration and will potentially lead to a cumbersome and contrived process due to confusion and complaints, due in part to the failure to achieve consensus and buy-in from municipal actors.

7 Conclusion

This article investigated the Danish approach to governing LSI, and explored the impacts of various institutional and procedural factors on the practice of planning at the land-sea interface in Denmark. Based on our analysis, we have arrived at three main conclusions. The first is that in Denmark, maritime interests appear to have legal priority over terrestrial ones. The second is that terrestrial and maritime planning systems are differentiated both in terms of institutional responsibility and scale. And the third is that the different priorities of the two planning systems meet at the coastline, creating conflicts. Despite the inclusion of an ‘*account shall be taken of land-sea interactions*’ clause in the Danish MSP Law (LBK 400, 2020 §6-3), we found that the Danish maritime planning system remains unintegrated with the terrestrial system. The two systems, with conflicting priorities regarding which industries to support in order to encourage economic growth, meet at a “solid” boundary, the coastline.

The complexity and conflict in this case has highlighted the importance of scale, the impact of institutional complexity, and the dissociation from reality that can materialise when these issues

are not considered. The EU MSP Directive gives plenty of room for diverse approaches to MSP (Hassler et al, 2019). The Danish approach to MSP and planning for LSI highlights the importance of networks and cooperation between the various involved authorities, and the need for a coherent strategy. We believe that the meaningful involvement of, and cooperation with, local authorities and a range of local experts would also improve the governance of LSI, helping to build consensus around decisions, especially if carried out at an earlier stage in the planning process. While this is not impossible at the national level, it is certainly easier when tackled at a more local scale. We believe that this supports the broader need for a move towards marine planning processes at the regional or municipal level, rather than purely national. More radically (and as suggested by Ehler et al., 2019), we believe that our case has highlighted some of the potential fallacies associated with using ‘the coastline’ as a way of dividing distinct terrestrial and marine national planning systems. We therefore suggest following the call made by Schlüter et al. (2020) for the development of a governance structure inspired by an explicitly coastal theory of governance, one that can better deal with the physical and institutional complexities of the coast and support improved policy integration.

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Figures:

Figure 1:

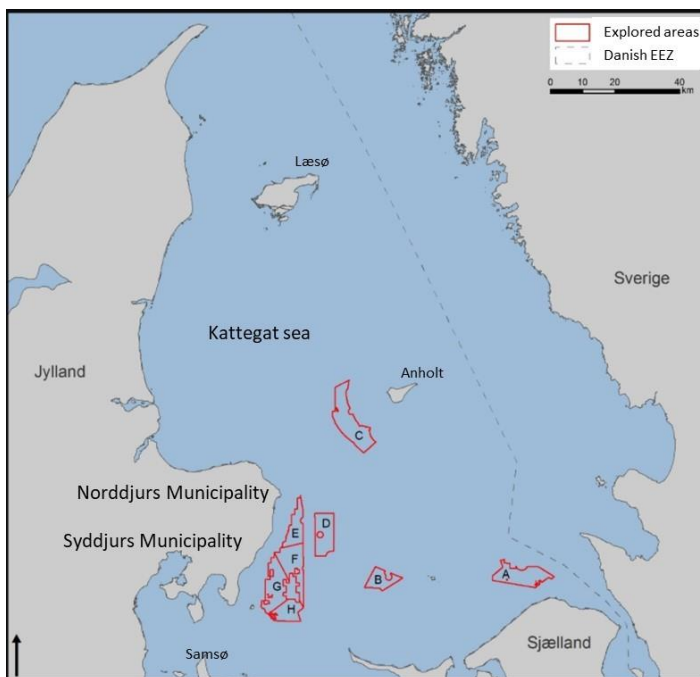


Figure 2:

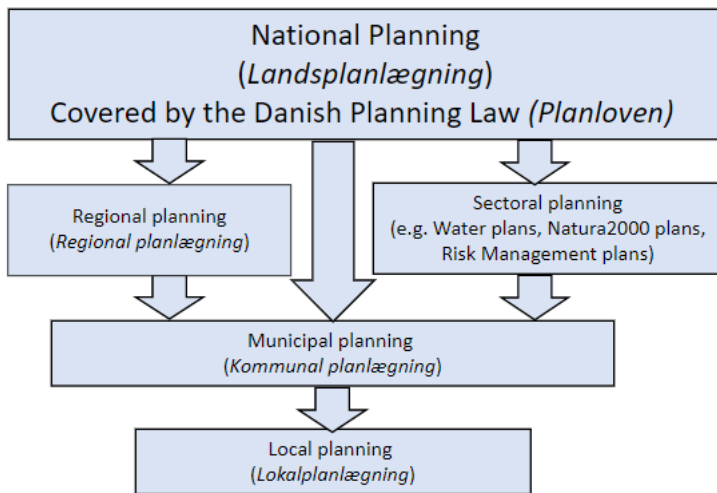


Figure 3:

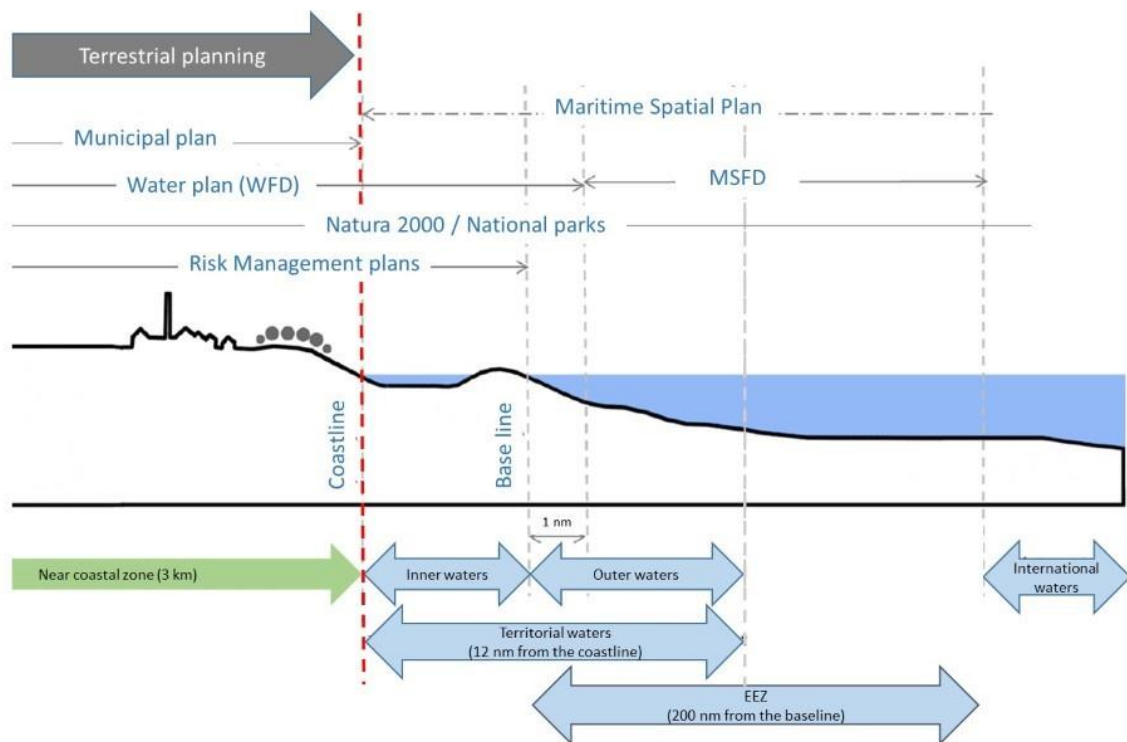


Figure captions:

FIGURE 1. The Djursland Peninsula, with its two municipalities Norddjurs and Syddjurs, lies on the eastern coast of Jutland. The red boxes represent the location of the designated areas for mariculture exploitation in the Kattegat Sea, the majority of which are located off the coast of Djursland. *Source:* adapted from Miljøstyrelsen (n.d4)).

FIGURE 2. Danish terrestrial planning hierarchy. Each layer needs to correspond with the layer above. *Source:* adapted from Hørsholm Kommune, nd.

FIGURE 3. Current planning framework for the Danish LSI area. *Source:* adapted from Nellemann & Anker, 2013 and Hegland et al., 2020).